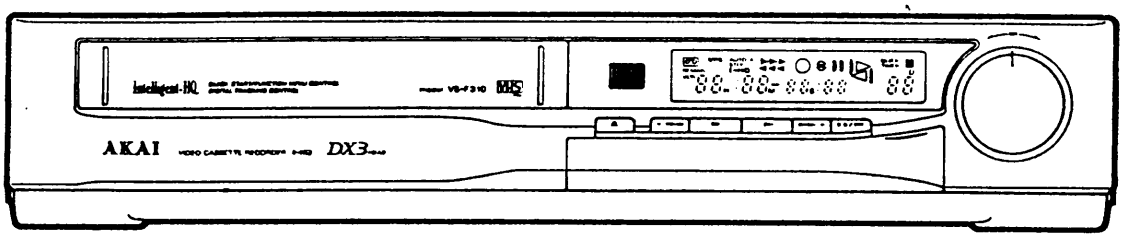
VS-F300EA/EOH
VS-F310EK/EOH
F320EM

AKAI SERVICE MANUAL



VIDEO CASSETTE RECORDER

MODEL VS-F310EOH

MODEL VS-F300EA/EOH

MODEL VS-F310EK/EOH, F320EM

SPECIFICATIONS

Format	
EA / EK	VHS standard
EM / EOH	VHS standard (PAL, MESECAM)
Video recording system	Rotary, slant azimuth two-head helical scan system
Rotary heads	3 video heads
RF. input	
EA	System B, G VHF ch 0 - 5, 5A, 6 - 11 UHF ch 21 - 69
EK	System I UHF ch 21 - 69
EM	System B, G (PAL, SECAM) VHF ch 2 -12 UHF ch 21 - 69
EOH	System B, G (PAL, SECAM) VHF ch 2 - 4, 5 - 12 UHF ch 21 - 69 Cable ch S1'- S3', S1 - S41
RF. output	
EA	System B type modulation VHF ch 0,1 switchable (preset ch 1)
EK	System I type modulation UHF ch 30 - 39 adjustable (preset ch 36)
EM	System B type modulation VHF ch 3, 4 switchable (preset ch 4)
EOH	System G type modulation UHF ch 30 - 39 adjustable (preset ch 36)
Recording (line input)	
EA / EK	PAL
EM / EOH	PAL, SECAM (MESECAM Tape)
Playback (line output)	
EA / EK.	PAL
EM	PAL, SECAM (MESECAM Tape) NTSC 4.43 (NTSC Tape) Simulated PAL (NTSC Tape playback only)
EOH	PAL, SECAM (MESECAM Tape)
Video	
Line input level	0.5 - 2.0 Vp-p / 75 ohms, unbalanced
Line output level	1.0 Vp-p / 75 ohms, unbalanced
S / N ratio	More than 45 dB
Horizontal resolution	More than 250 lines

Audio	
Line input level	-6dBs / 50 kohms, unbalanced
Line output level	-6dBs / 1 kohms, unbalanced
S / N ratio	More than 40 dB
Frequency response	70-10,000 Hz
Recording / playback time.	
EA / EK / EOH	240 min. with E-240 cassette
CCIR (EM)	240 min. with E-240 cassette
NTSC playback only (EM)	160 min. with T-160 cassette
Tape speed	
EA / EK / EOH	23.39 mm / sec
CCIR (EM)	23.39 mm / sec
NTSC (EM)	33.35 mm / sec
Quick finder	
EA / EK / EOH	Approx. 9 times normal speed
CCIR (EM)	times normal speed
NTSC (EM)	Approx. 7 times normal speed
FF, REW time	Approx. 5 min. with E-180 cassette
Timer	
Programme	8 programme / 1 year
Clock reference	Quartz crystal
Display	TV screen & FL (Tape counter, Timer etc.)
Power requirements	
EA / EK	240 V AC, 50Hz
EOH	220-230 V AC, 50Hz
EM	110-127 / 220-240 V AC, 50 / 60Hz
Power consumption	
EA / EK / EM	36 W
EOH	37 W
Operating temperature	5°C - 40°C
Dimensions	
EA	425 (W) x 82 (H) x 320 (D) mm
EK / EM / EOH	425 (W) x 82 (H) x 322 (D) mm
Weight	5.0 kg

Standard accessories	
Antenna cable	1
Remote control unit	1
Batteries for remote control	2
Operator's manual	1

*For improvement purposes, specifications and design are subject to change without notice.

0 dBs = 0.775 V

★INFORMATION

SYMBOLS OF MODEL NAME FOR PRIMARY DESTINATION

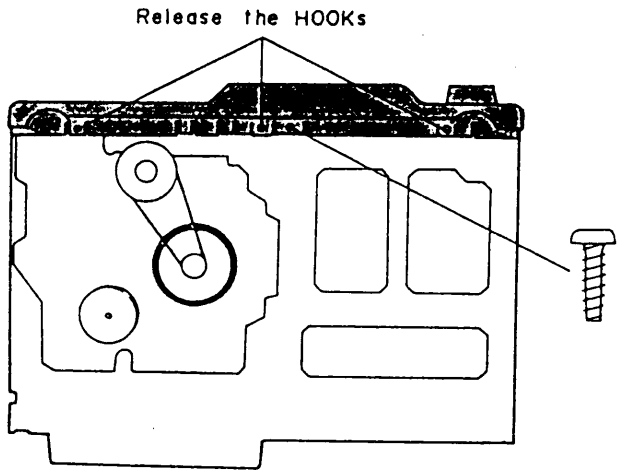
Symbol indicates the destination of the units as listed below.

Symbol	Power Classification	Principal destination	TV System	
			Color	Broadcast
EA	S	Australia	PAL	B,G
ED	E	China	PAL	D
EDG	E	East Europe	PAL	D,K
EDI	E	China, Hong Kong	PAL	D,K,I
EG	E	Spain, Northern Europe, Other	PAL	B,G
	Y7	Saudi Arabia		
EK	B	U.K.	PAL	I
	Y1	Hong kong		
EM	E	Middle East	PAL	B,G
	Y7	Saudi Arabia		
EO	E	Holland, Switzerland, Northern Europe	PAL	B,G
	V	Italy		
EOH	E	Holland, Belgium	PAL	B,G
	V	Italy		
EOG	V	Germany	PAL	B,G
ES	E	South Africa, Ireland, Hong kong	PAL	I
EV	E	South-East Asia	PAL	B,G
	U	Middle East, South-East Asia		
	Y1	New Zealand		
	Y7	Saudi Arabia		
EZ	S	New Zealand	PAL	B,G
EGN	E	Middle East	PAL,NTSC	B,G
	Y7	Saudi Arabia		
S	E	France	SECAM	L
SK	E	Latin America, Oceania, SECAM-OIRT	SECAM	K,K1
SEG	E	France, Switzerland	SECAM,PAL	L,B,G
U	A	U.S.A.	NTSC	M
	C	Canada		
UM	U	Latin America	NTSC	M
J	J	Japan	NTSC	M

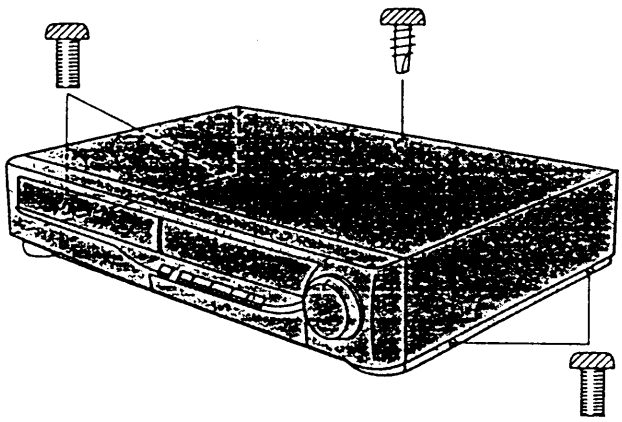
I. DISASSEMBLY

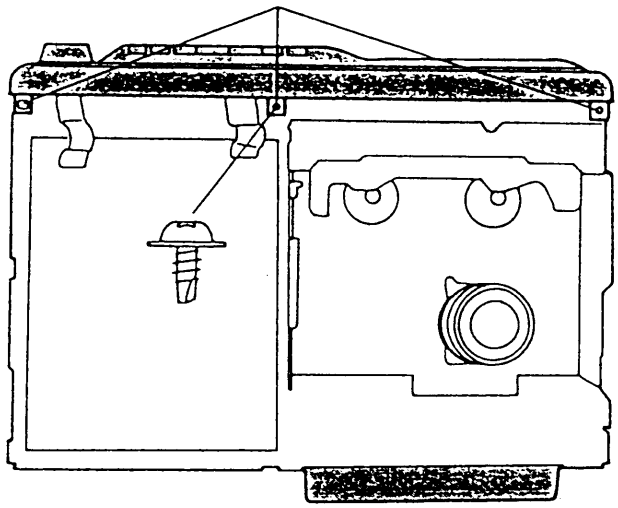
In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the illustrations.
Reassemble in reverse order.
When reattaching the FRONT PANEL, hold the cassette loading slot door in the upright (open) position.

3. Removal of FRONT PANEL

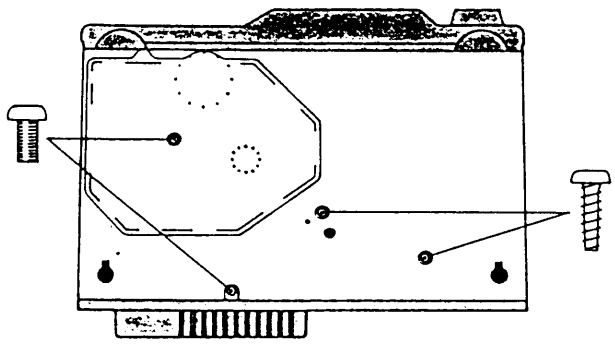


1. Removal of UPPER COVER

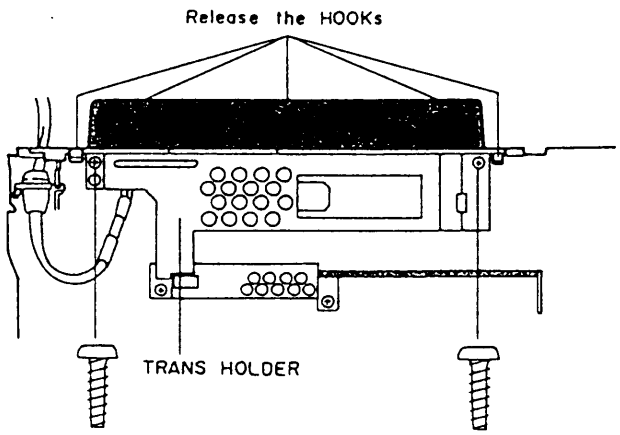




2. Removal of BOTTOM COVER



4. Removal of TRANS COVER



II. PRINCIPAL PARTS LOCATION

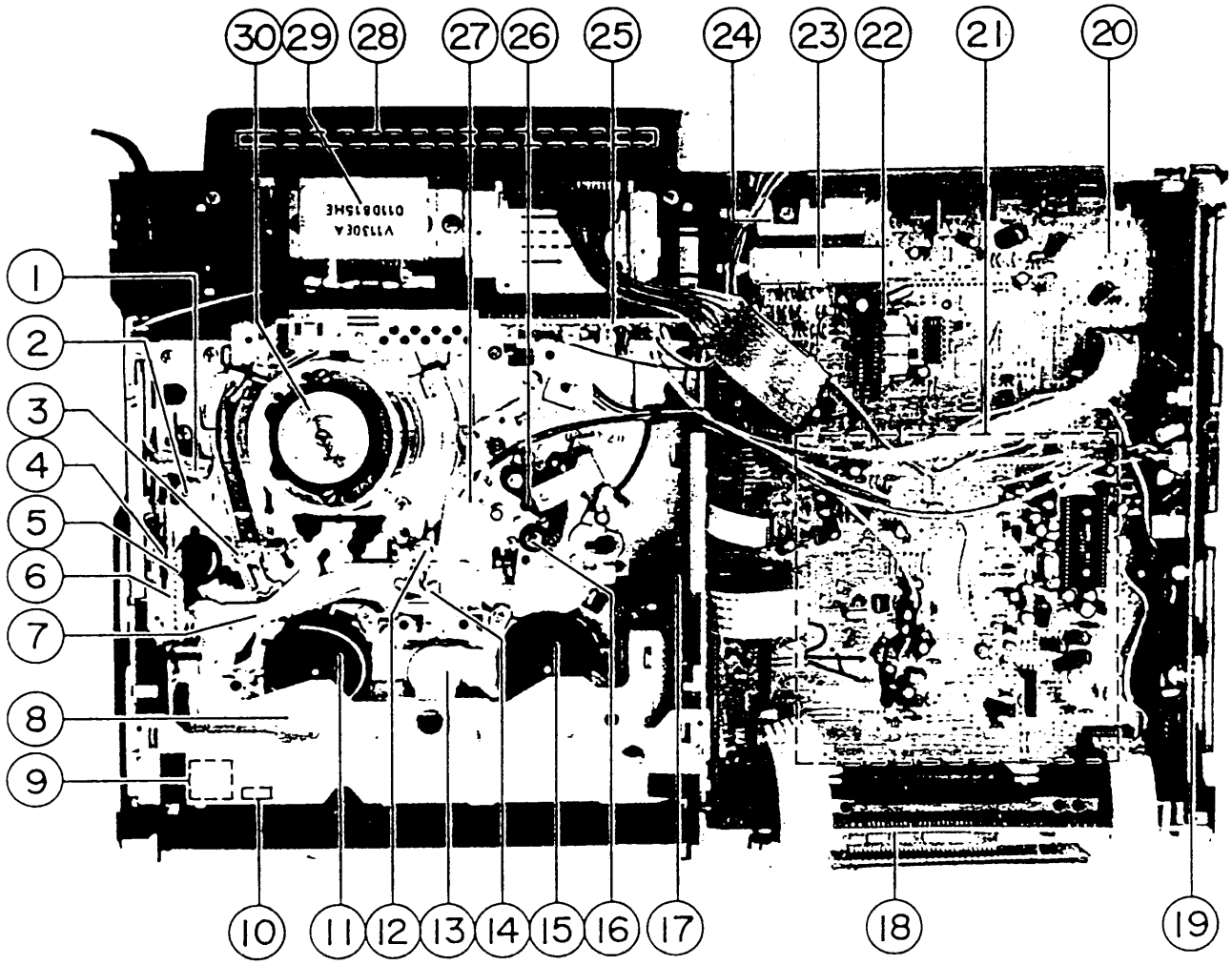


Fig. 2-1 Top view

1. FULL TRACK ERASE HEAD
2. SUPPLY TAPE GUIDE
3. SUPPLY LOADING LEADER
4. SENSOR (S) PCB (END SENSOR)
5. FRONT LOADING GEAR
6. FRONT LOADING SLIDER
7. TENSION ARM
8. CASSETTE LOAD BLK
9. LOADING MOTOR
10. REC SAFETY SWITCH
11. SUPPLY REEL TABLE
12. TAKE UP LOADING LEADER
13. IDLER PART
14. SENSOR LED
15. TAKE UP REEL TABLE
16. CAPSTAN MOTOR
17. SENSOR (T) (START SENSOR)
18. OPERATION (A) PCB
19. MAIN (B) PCB
20. MAIN (A) PCB
21. VPT / VPS PCB (OPTION)
22. VIF UNIT
23. TUNER UNIT
24. RF CONVERTOR UNIT
25. PRE AMP PCB
26. PINCH ROLLER
27. AUDIO / CONTROL / S. ERASE HEAD
28. POWER SUPPLY PCB
29. POWER TRANSFORMER
30. VIDEO HEAD DRUM BLOCK

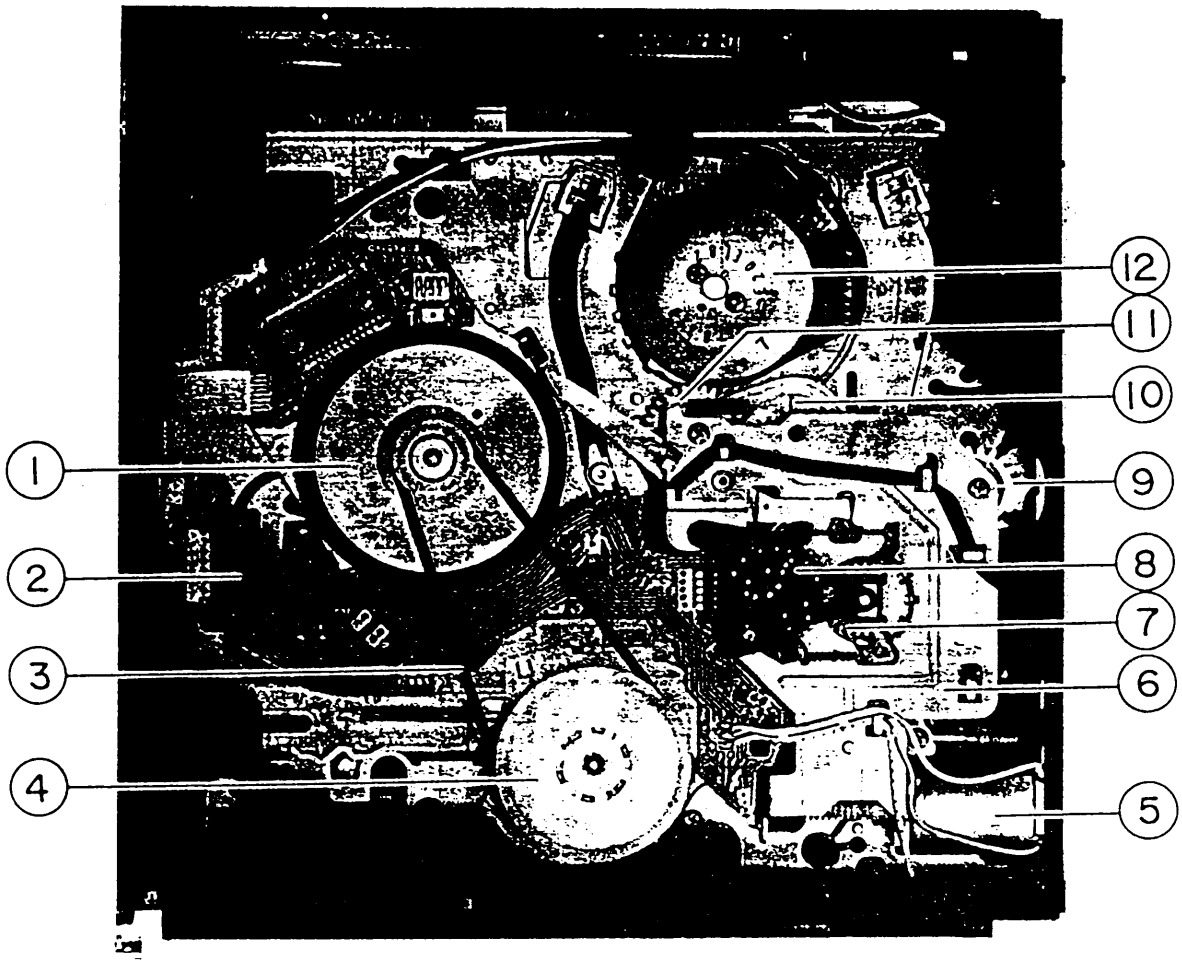


Fig. 2-2 Bottom view

1. CAPSTAN MOTOR BLOCK
2. SENSOR PCB
3. CAPSTAN BELT
4. CLUTCH DISK PART
5. LOADING MOTOR
6. LOADING DRIVE BLOCK
7. CAM SLIDER GEAR
8. MODE SELECT SWITCH
9. FRONT LOADING GEAR
10. TOGGLE (S) GEAR BLOCK
11. TOGGLE (T) GEAR BLOCK
12. DRUM MOTOR BLOCK

III. MAIN COMPONENTS REPLACEMENT

3-1. REMOVAL OF THE EJECTOR BLOCK

* Set the loading mechanism to the "EJECT" position by pressing the EJECT button. Then disconnect the AC power plug from the AC socket before proceeding.

3-1-1. Removal of the CASSETTE LOAD BLK

1) Remove the two Ⓐ screws on the UPPER PLATE as shown in Fig. 3-1 then remove the UPPER PLATE.
2) Lift up the FRONT GUIDE while pushing the CASSETTE LOAD BLK backward, then remove the FRONT GUIDE.
3) Lift up the front side of the CASSETTE LOAD BLK gently then remove it. To avoid damaging the pins of the CASSETTE LOAD BLK and the groove of the MECHA. FRAME, do not add excessive force to the CASSETTE LOAD BLK when removing it.

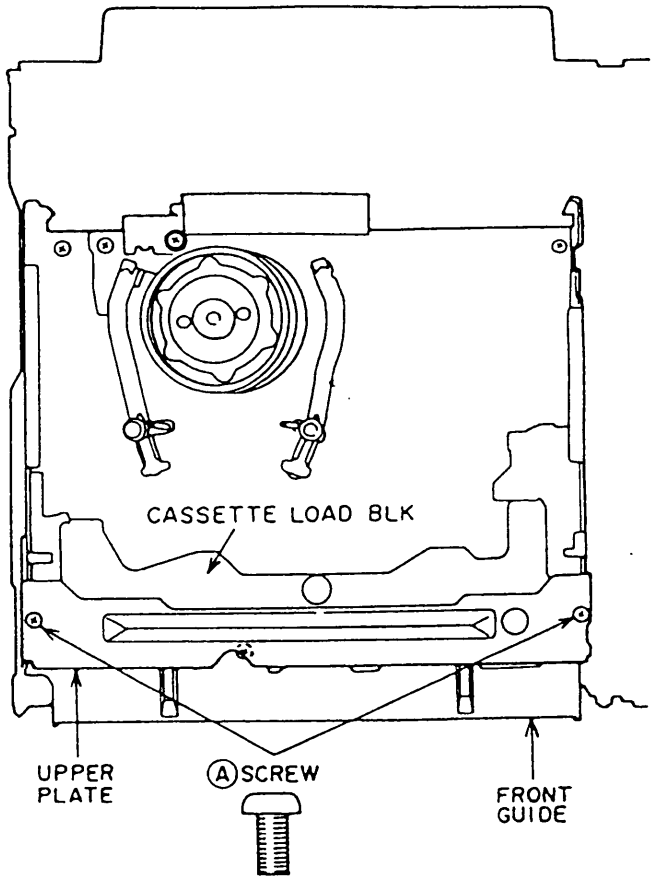


Fig. 3-1

3-1-2. Removal of the LOADING ARM BLK

1) Release the stopper on the right side end of the LOADING ARM BLK's shaft (Refer Fig. 3-2) by pressing the stopper tab with a flat head (—) screwdriver. Then remove the shaft's right end from the bracket.

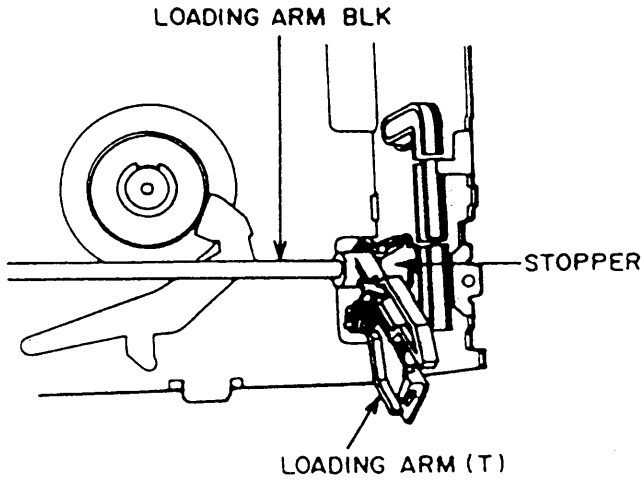


Fig. 3-2

2) Hold the LOADING ARM (T) and turn it 30 degrees clockwise, then pull out the shaft's left end from the bracket. To avoid damaging the JOINT GEAR and EJECT GEAR, take special care when removing. (Refer Fig. 3-3)

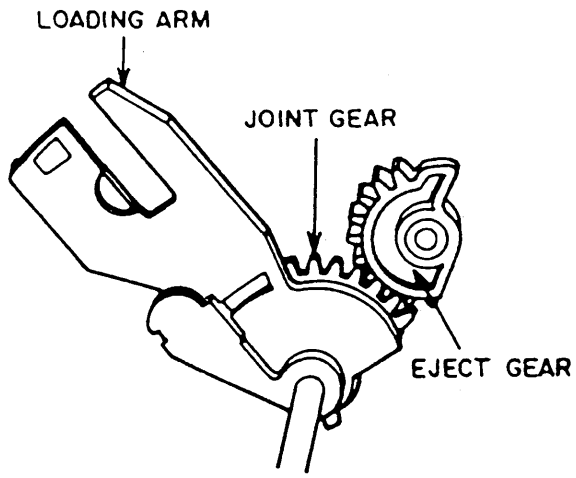


Fig. 3-3

3-2.REMOVAL OF THE SENSOR PC BOARD

* Before proceeding with removal of the SENSOR PCB the loading mechanism must be set to the "unloaded" position (the position where the CAM SLIDER GEAR's groove mark is visible through the hole of the MODE SELECT SW.) as shown in Fig. 3-4.

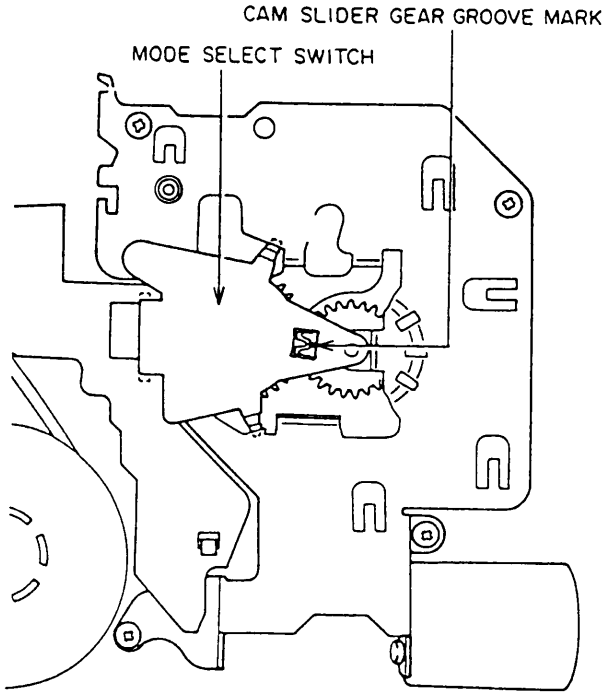


Fig. 3-4

To set the loading mechanism to the "unloaded" position, proceed with one of the following 1) or 2) procedures.

1) Insert a video cassette tape which you no longer need. Once the tape has been loaded or has entered the "play" mode press the POWER button to turn the power off. Disconnect the AC power plug from the AC socket after the cassette tape has been unloaded.
2) Remove the UPPER PLATE, FRONT GUIDE and CASSETTE LOAD BLK. (Refer to 3-1-1. Removal of the CASSETTE LOAD BLK.)
   Plug in the AC power cord. The LOADING ARM BLK will move backward and then both the LOADING LEADERs will be set to the "tape loaded position" automatically. Wait more than 10 seconds. (After the PINCH ROLLER is disengaged from the CAPSTAN and the SUPPLY REEL stops its rotation, the mechanism is set to "stand-by".)
   Press the RESET button on the OPERATION PCB.
   The mechanism will be set to the "tape unloaded position" thereafter.
   Disconnect the AC power plug from the AC power socket.

3-2-1. Removal of the MODE SELECT SWITCH

1) Release the two Ⓐ stoppers as shown in Fig. 3-5.

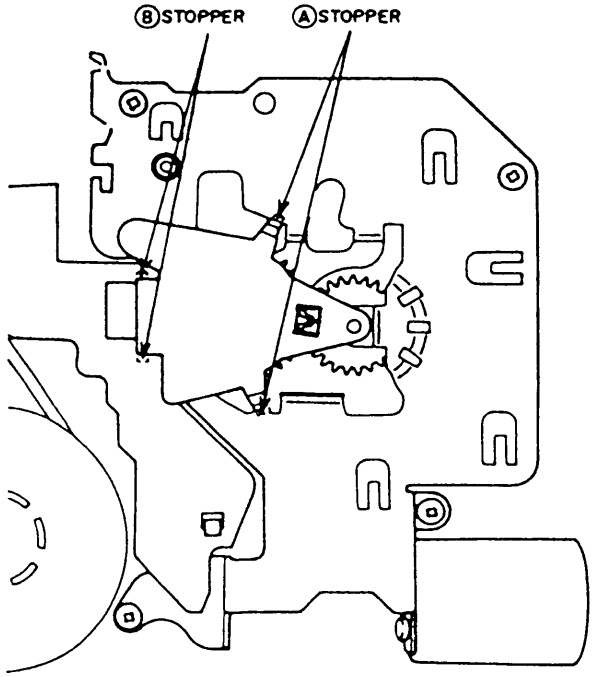


Fig. 3-5

2) Release the two Ⓑ stoppers carefully while pulling up the MODE SELECT SWITCH. Then remove the MODE SELECT SWITCH. (Do not damage the pins of the MODE SELECT SWITCH or the connector P1 on the SENSOR PCB).

3-2-2. Removal of the SENSOR PC Board

1) Disconnect the connector P303 on the MAIN (A) PCB.
2) Remove the capstan belt.
3) Release the Ⓐ , Ⓑ and Ⓒ stoppers as shown in Fig. 3-6. Then remove the SENSOR PCB.

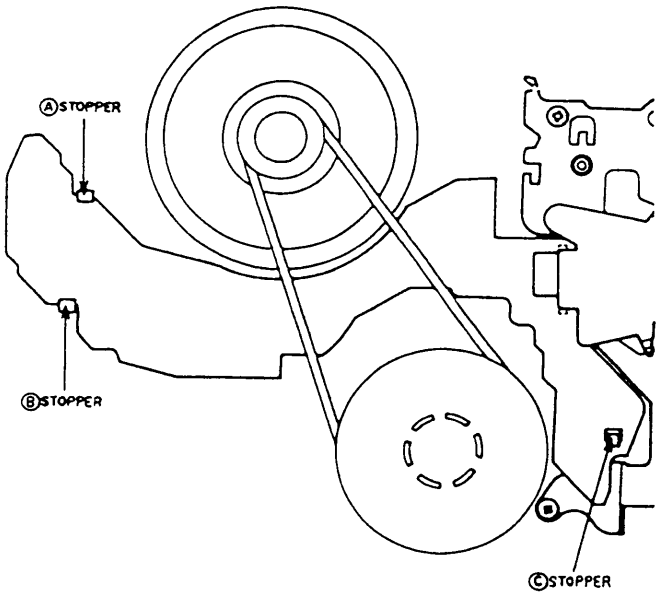


Fig. 3-6

3-3.REMOVAL OF THE LOADING DRIVE BLK

Set the loading mechanism at the "unloaded" position as well as 3-2 (REMOVAL OF THE SENSOR PC BOARD). However this time, to avoid damaging the tape and mechanical parts, refer to 3-2, *(2) only.

1) Remove the MODE SELECT SWITCH in the same manner as 3-2-1 (Removal of the MODE SELECT SWITCH).
2) Unhook the five wires from each tab. Two wires from the SENSOR(S), two wires from the LOADING MOTOR and one wire from the REC SAFETY SWITCH.
3) Remove the Ⓐ, Ⓑ, Ⓒ and Ⓓ screws, then remove the LOADING DRIVE BLK as shown in Fig. 3-7.

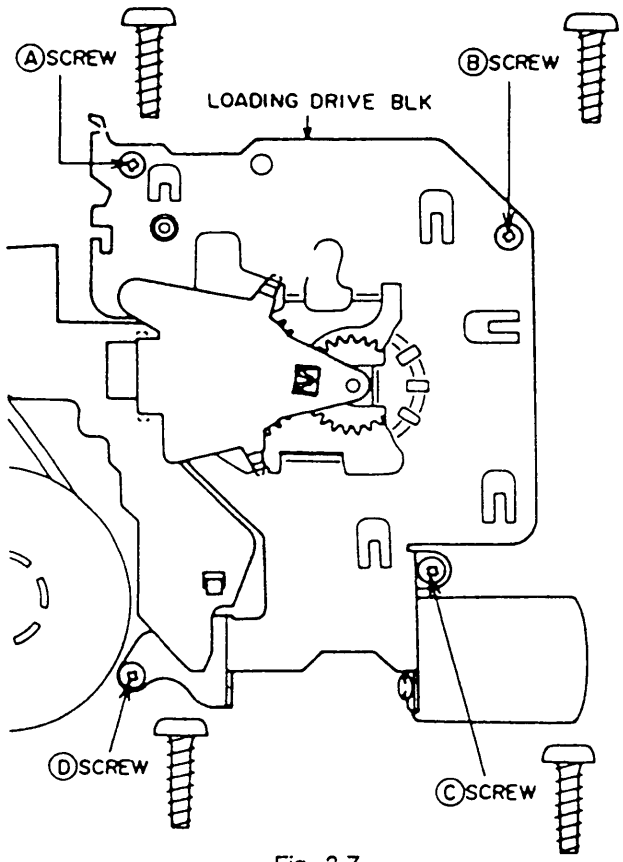


Fig. 3-7

3-4.REASSEMBLY OF THE LOADING MECHANISM BLK

3-4-1. Position of the TOGGLE GEARs (T) and (S)

1) Set the TOGGLE GEAR (T) and TOGGLE GEAR (S) to the unloaded position with your fingers. Align the Ⓐ mark on the TOGGLE GEAR (S) with the Ⓐ hole of the TOGGLE GEAR (T) as shown in Fig. 8.

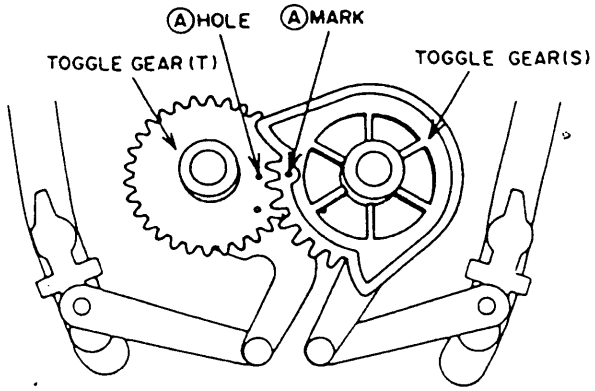


Fig. 3-8

3-4-2. Installation of the CAM SLIDER GEAR & FRONT LOADING GEAR

1) Attach the WORM WHEEL GEAR as shown in Fig. 3-9.

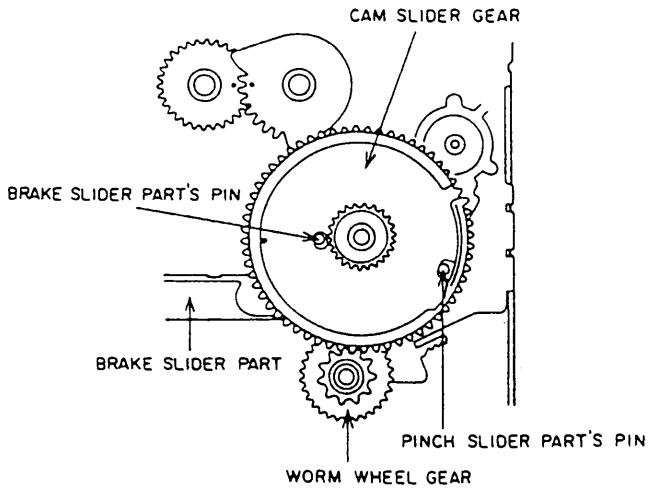


Fig. 3-9

2) Set the CAM SLIDER GEAR. At this time, adjust the position of the BRAKE SLIDER PART and PINCH SLIDER PART so that both pins appear through the holes on the CAM SLIDER GEAR as shown in Fig.3-9.

3) Attach the FRONT LOADING GEAR as shown in Fig. 3-10. At this time, align the Ⓑ mark on the FRONT LOADING GEAR with the Ⓑ hole of the FRONT LOADING SLIDER as shown in Fig. 3-11.

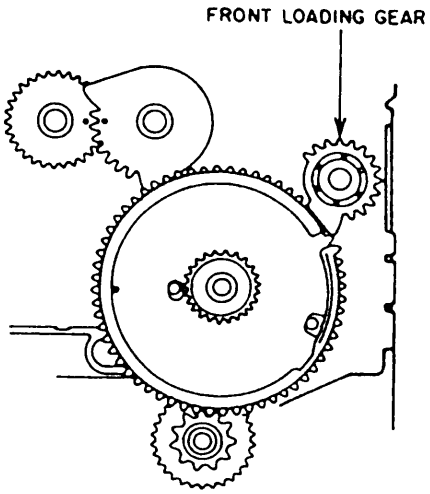


Fig. 3-10

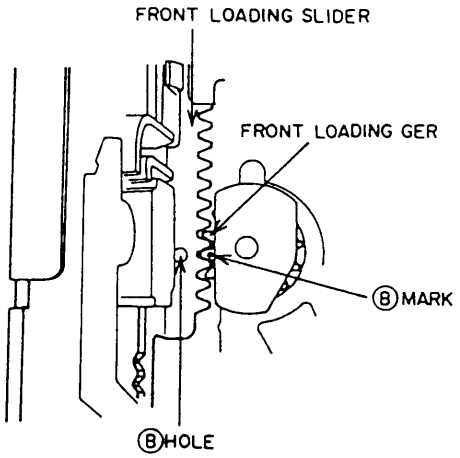


Fig. 3-11

3-4-3. Confirmation of the position of the EJECT GEAR

1) Confirm that the EJECT GEAR is in the correct position as shown in Fig. 3-12.

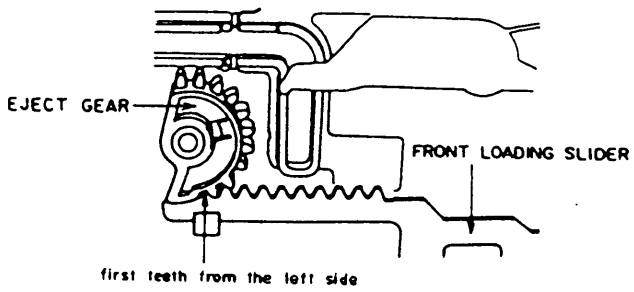


Fig. 3-12

2) Install the LOADING DRIVE BLK as shown in Fig. 3-13.

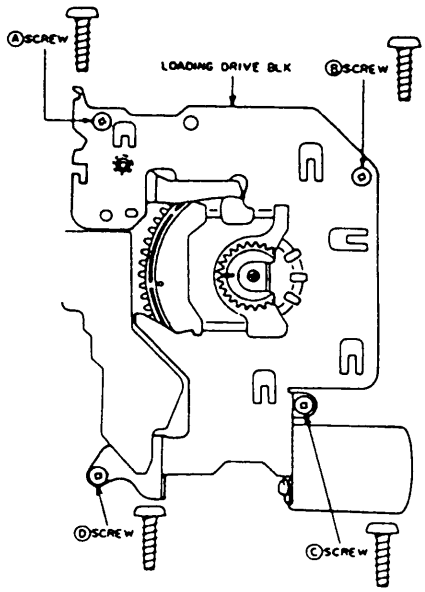


Fig. 3-13

3-4-4. Installation of the MODE SELECT SWITCH

1) Set the MODE SELECT SWITCH's gear so that the © mark is in the center of the © hole as shown in Fig. 3-14.

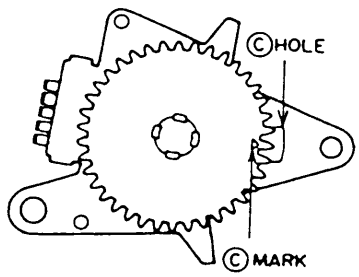


Fig. 3-14

2) Attach the MODE SELECT SWITCH to the LOADING DRIVE BLK. At this time, align the hollow of the gear's tooth (reverse side of the © mark) with the © groove of the CAM SLIDER GEAR as shown in Fig. 3-15.

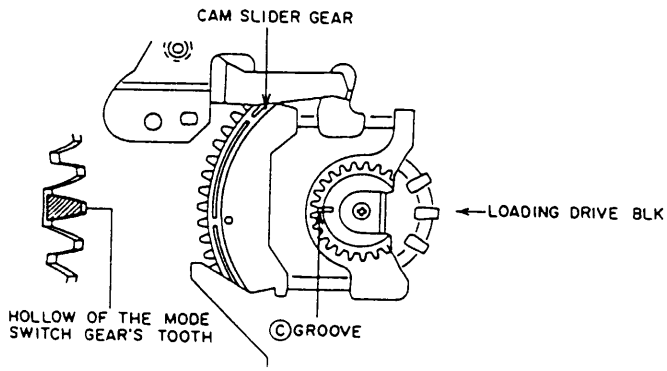


Fig. 3-15

3-4-5. Installation of the LOADING ARM BLK

1) While covering the SENSOR (S) with your fingers, connect the AC power plug to the AC socket. The FRONT LOADING SLIDER will reach the "EJECT" position. Then disconnect the AC power plug from the AC socket before you release your fingers from the SENSOR (S).
2) Install the LOADING ARM BLK in the reverse order of 3-1-2 (Removal of the LOADING ARM BLK). Set the position between both the EJECT GEAR and the JOINT GEAR as shown in Fig. 3-16.

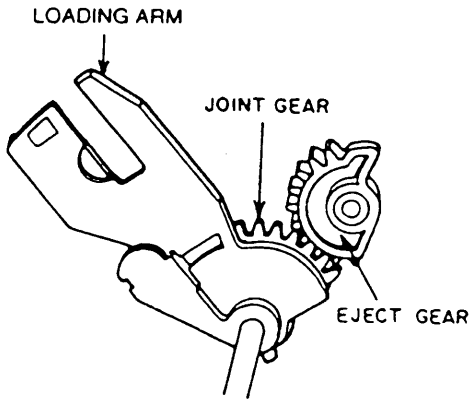


Fig. 3-16

3-4-6. Installation of the CASSETTE LOAD BLK, FRONT GUIDE and UPPER PLATE

1) Attach the CASSETTE LOAD BLK, FRONT GUIDE and UPPER PLATE in the reverse order of 3-1-1 (Removal of the CASSETTE LOAD BLK).
2) Insert a video cassette tape and confirm that the loading mechanism will operate properly.

3-5. REPLACEMENT OF THE PINCH HOLDER PART

1) Remove the grip ring and release the stopper of the PINCH ARM and remove the PINCH ARM BLK as shown in Fig 3-17.

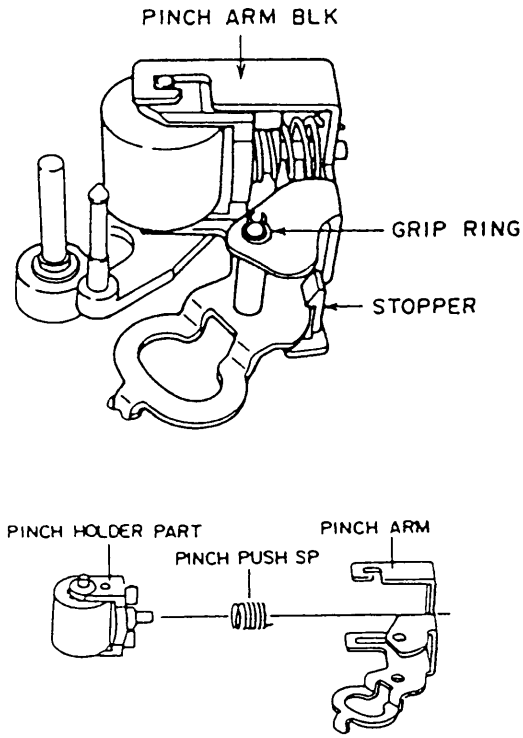


Fig. 3-17

2) Turn the PINCH HOLDER PART 30 degrees clockwise while pushing it backward and remove the PINCH HOLDER PART from the PINCH ARM.
3) Reassemble the PINCH ROLLER ARM BLK in the reverse order of 1) to 2).

3-6. REPLACEMENT OF THE IDLER PART AND REVIEW BRAKE PART

1) Remove the REWIND BRAKE PART, CASSETTE LOAD BLK & ARM LOADING BLK. (Refer to 3-1, REMOVAL OF THE EJECTOR BLK.)
2) Release the stopper of the IDLER PART as shown in Fig. 3-18, then remove it.

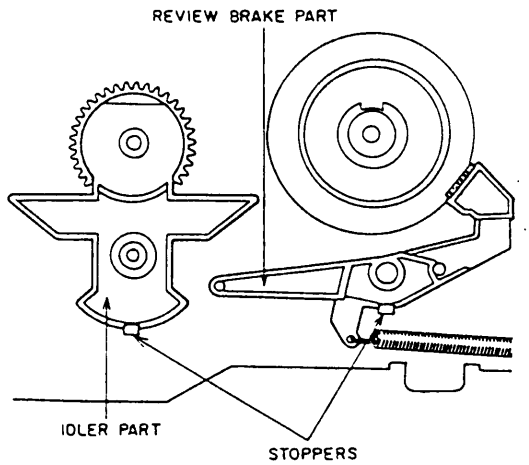


Fig. 3-18

3) Take off the review brake part spring, then release the stopper of the REVIEW BRAKE PART and remove it.
4) Reassemble these parts in the reverse order of 1) to 3).

3-7. REPLACEMENT OF THE UPPER DRUM

3-7-1. Removal of the UPPER DRUM

1) Unsolder the six relay leads and remove the two upper drum fixing screws as shown in Fig. 3-19.
2) Gently lift and remove the UPPER DRUM.

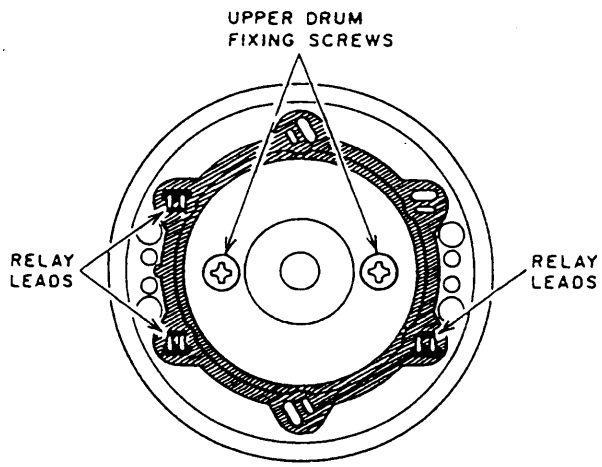


Fig. 3-19

3-7-2. Installation of the UPPER DRUM

1) Attach the UPPER DRUM to the LOWER DRUM ROTOR so that the upper drum convex Ⓐ and lower drum rotor's white mark are in the same direction as shown in Fig. 3-20.

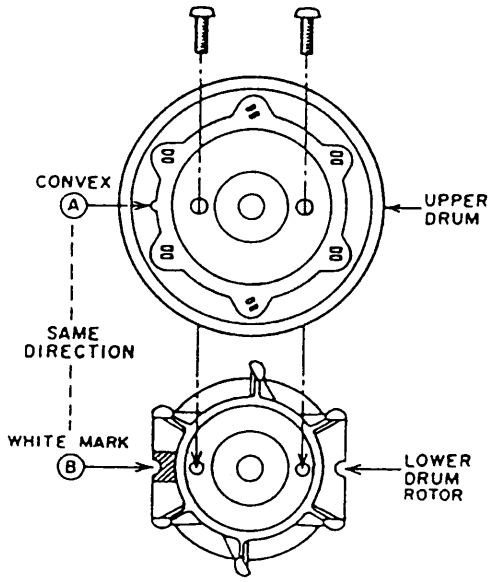


Fig. 3-20

NOTE: Because height precision is required for proper performance, and because head tips are fragile, the following points should be noted when replacing the UPPER DRUM BLOCK.

a) Do not loosen the set screw on the collar preload.
b) Before fixing, use alcohol to clean both surfaces where the upper drum and the rotary transformer meet.
c) If the UPPER DRUM can not be inserted on to the shaft easily during installation, clean the hole in the UPPER DRUM with alcohol and put a little oil on the shaft.
d) Make sure that the upper drum fixing screw holes on the rotary transformer part and the upper drum fixing screw penetration holes match exactly before inserting the fixing screws.
e) Tighten the two upper drum fixing screws alternately and gradually.

3-7-3. After replacement

After replacement, the following adjustments are necessary for the proper performance.

1) Control head Phase adjustment. (IV. MECHANICAL ADJUSTMENT 4-3-3.)
2) PB switching point adjustment. (V. ELECTRICAL ADJUSTMENT Step 1)
3) Video head REC current adjustment. (V. ELECTRICAL ADJUSTMENT Step 6)
4) ENV. DET (I-HQ) adjustment. (V. ELECTRICAL ADJUSTMENT Step 10)

3-8.DRUM MOTOR PC BOARD REPLACEMENT

1) Remove the two Ⓐ screws on the ROTARY PLATE and remove the ROTARY PLATE.
   Then disconnect the connector on the DRUM MOTOR PCB as shown.

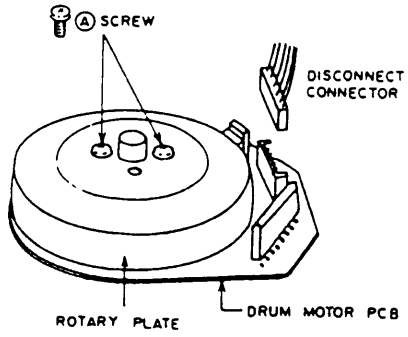


Fig. 3-21

2) Remove the three Ⓑ screws which retain the DRUM MOTOR PCB and replace the DRUM MOTOR PCB.

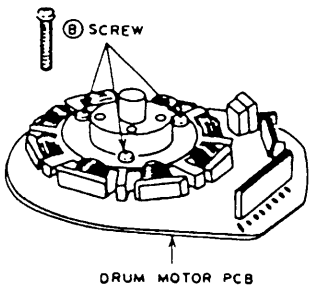


Fig. 3-22

3) Attach the ROTARY PLATE to the collar preload so that the rotary plate Ⓒ hole and collar preload Ⓓ hole are in the same direction.

Fig. 3-23

3-9.REMOVAL OF THE MECHANISM BLOCK

3-9-1. Removal of the PRE AMP PC Board

1) Remove the two Ⓐ screws then pull up the PRE AMP PCB as shown in Fig. 3-24.

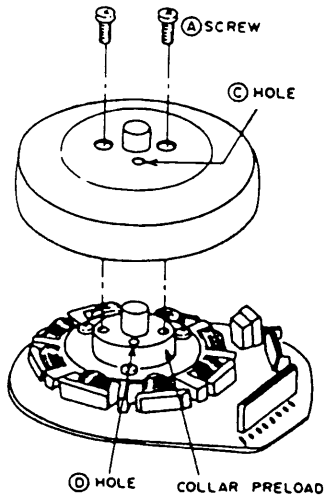


Fig. 3-24

3-9-2. Removal of the MECHANISM BLK (MECHA. FRAME)

1) Disconnect the connectors P301, P302, P303, on the MAIN (A) PCB and P1 on the A/C HEAD PCB.
2) Remove the three Ⓒ screws from the MECHA. FRAME as shown in Fig. 3-24.
3) Hold the rear side of the MECHA. FRAME then remove by pulling up backward.
4) Reassemble in the reverse order for installation.

IV. MECHANICAL ADJUSTMENT

4-1.BACK TENSION ADJUSTMENT

1) Play back a recorded tape which is no longer needed.
2) Confirm that the Ⓐ groove on the TENSION ARM aligns with right end of the Ⓐ mark on the MECHA. CHASSIS as shown in Fig.4-1.
3) If the result is not satisfactory, eject the tape and adjust the TENSION ADJUST repeatedly until the result is satisfactory.

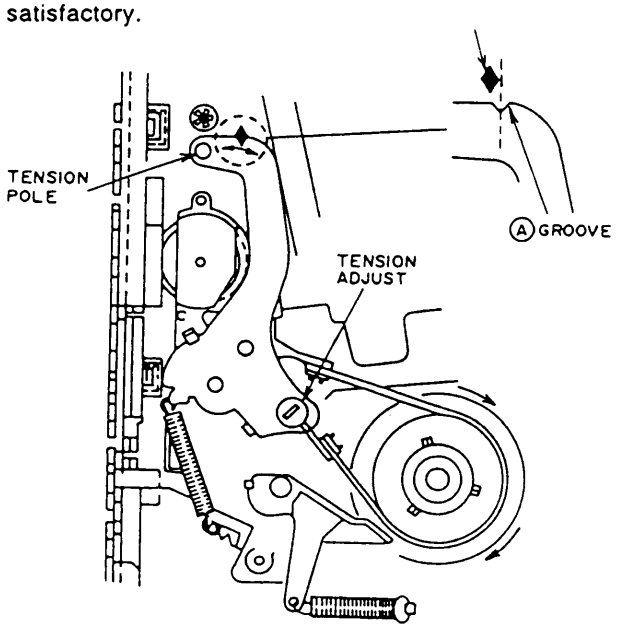


Fig. 4-1

4-2.TAPE TRANSPORT ADJUSTMENTS

NOTE: The following adjustments are required only when an irregularity is found since these adjustment are performed precisely at the factory.

4-2-1. Tape curl adjustment at the TAKE-UP TAPE GUIDE

1) Play back a recorded tape which is no longer needed.
2) Turn the Ⓐ screw on the A/C HEAD BLK until the edge of the tape barely touches the lower part of TAKE-UP TAPE GUIDE without any curl or wrinkle.
3) Once the Ⓐ screw is adjusted, A/C HEAD height and azimuth adjustment is required. (Refer to 4-3. A/C HEAD POSITION ADJUSTMENT.)

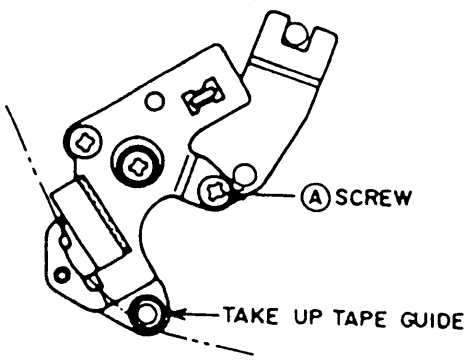


Fig. 4-2

(TAPE-UP TAPE GUIDE)

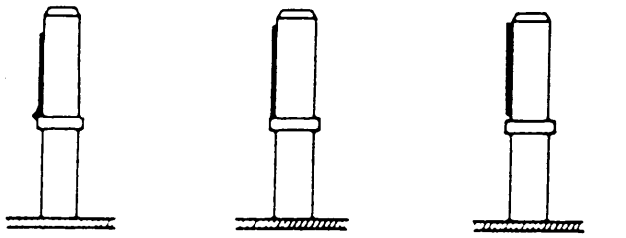


Fig. 4-3

4-2-2. Confirmation of tape curl at the SUPPLY TAPE GUIDE

Confirm that the edge of the tape barely touches the lower part of the SUPPLY TAPE GUIDE without any curl or wrinkle as shown in Fig.4-4.

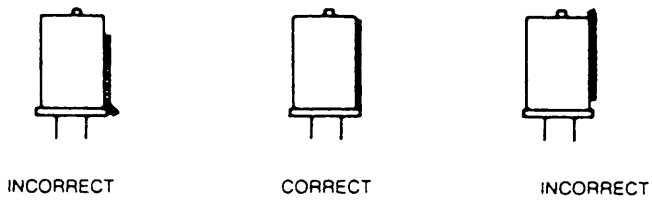


Fig. 4-4

4-2-3. REVIEW ARM height adjustment

1) Play back the beginning part of an E-240 (T-160) tape and set the unit in the REVIEW mode by pressing the REW button.
(Remove the tape protection cover to make the adjustment easy.)

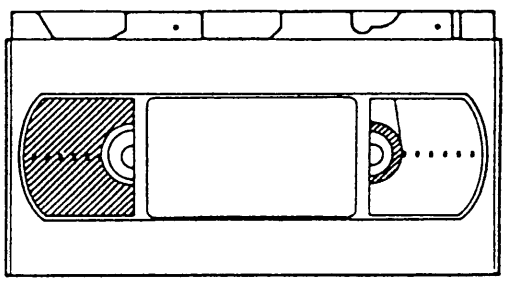


Fig. 4-5

2) Turn the REVIEW ARM height Ⓐ nut so that the edge of the tape barely touches the lower part of the TAKE-UP TAPE GUIDE without any curl or wrinkle between the TAKE-UP TAPE GUIDE and the CAPSTAN SHAFT as shown in Fig.4-6 to Fig.4-8.

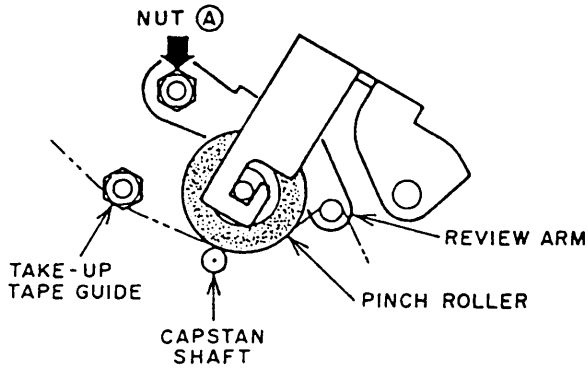


Fig. 4-6

(TAKE-UP TAPE GUIDE)

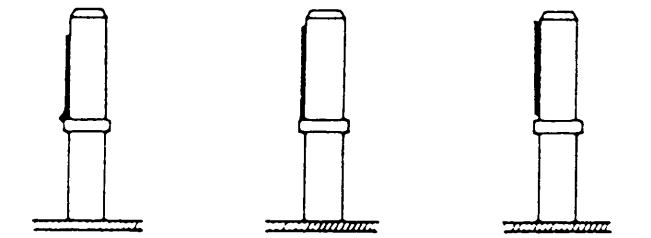


Fig. 4-7

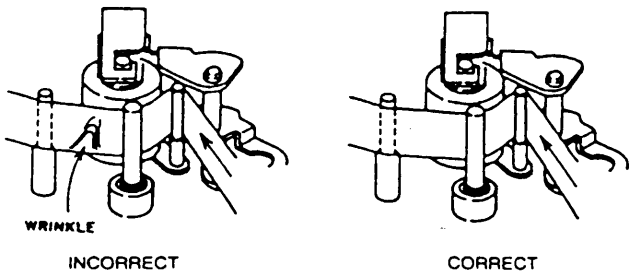


Fig. 4-8

3) Play back the beginning part of an E-240 (T-160) tape and this time set the unit in the QUE mode by pressing the F.FWD button.
4) Confirm there is no curl or wrinkle at REVIEW ARM's guide.
If curl or wrinkle of the tape has occurred, slightly turn the Ⓐ nut (Shown in Fig.4-6) until it disappears.

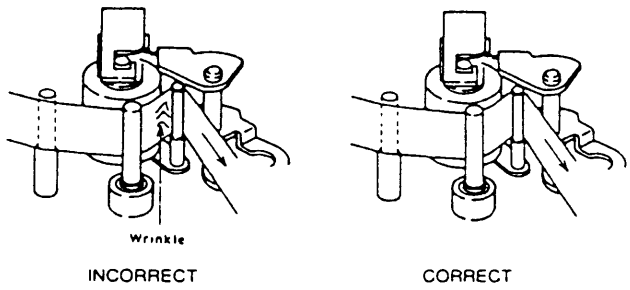


Fig. 4-9

5) Set the unit in REVIEW mode again. Then confirm that there is no curl or wrinkle at the TAKE-UP TAPE GUIDE. (A small gap may appear after this adjustment, but this is allowable)

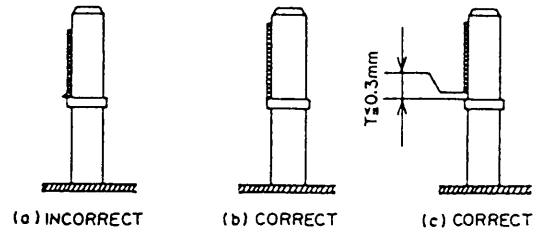


Fig. 4-10

NOTE:
1. If results are not satisfactory, repeat steps 2) to 5).
2. Always play an undamaged tape to obtain satisfactory adjustment.
3. Because an E-240 (T-160) tape can easily be damaged due of its thinness, a pre-adjustment with an E-180 (T-120) tape is recommended.

4-2-4. LOADING LEADER height adjustments

1) Slightly loosen the set screw at the lower part of the LOADING LEADERs (L), (R) so that the LOADING LEADER can be adjusted with reasonable tightness. (Refer Fig.4-11.)

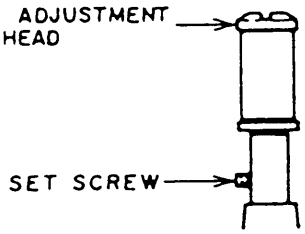


Fig. 4-11

2) Play back the reference tape TF-530RFS (AT-751775).
3) Connect an oscilloscope's CH-1 to the TR510 emitter (ENVE) on the MAIN (A) PCB and CH-2 to the TP1 (VSWP) on the PRE AMP PCB for triggering.
4) Turn the LOADING LEADER heads with a flat head (—) screwdriver to obtain flat RF envelope as ideal envelope as shown in Fig.4-12.
5) After adjustment is completed, tighten the loading leader set screws.

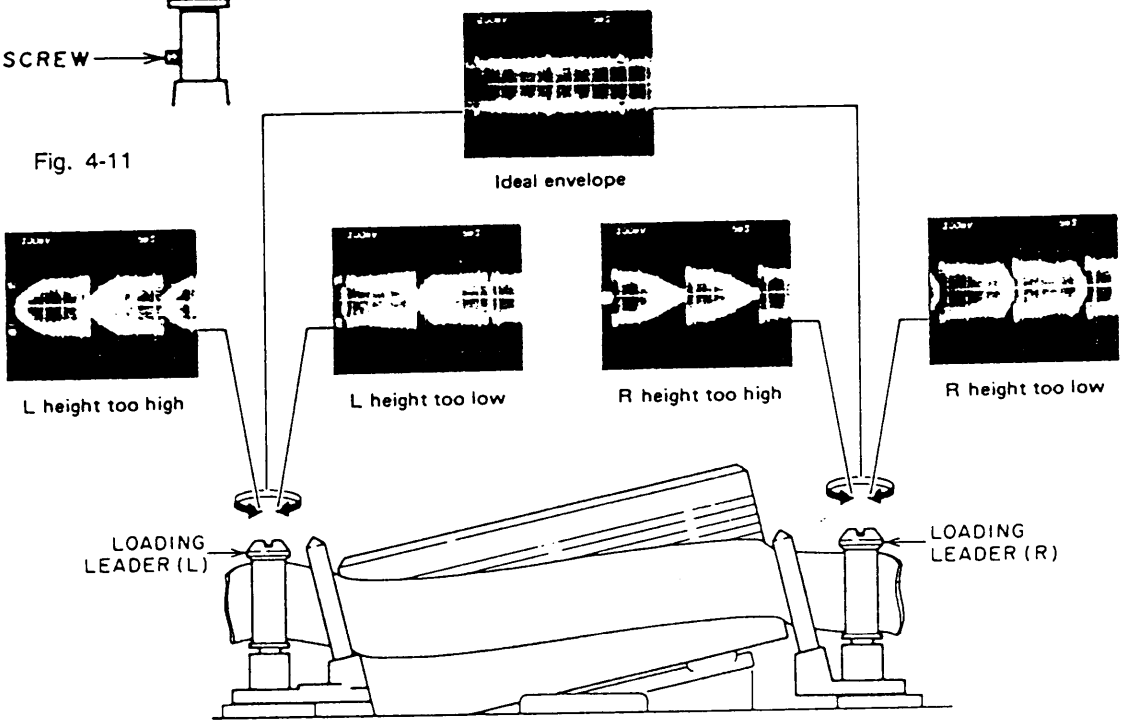


Fig. 4-12

4-3.A/C HEAD POSITION ADJUSTMENT

4-3-1. Azimuth adjustment

1) Connect an AC voltmeter or an oscilloscope to the AUDIO OUT terminal on the rear panel.
2) Play back the reference tape TF-530RFS (AT-751775).
3) Adjust the Ⓑ screw to obtain the maximum audio output.

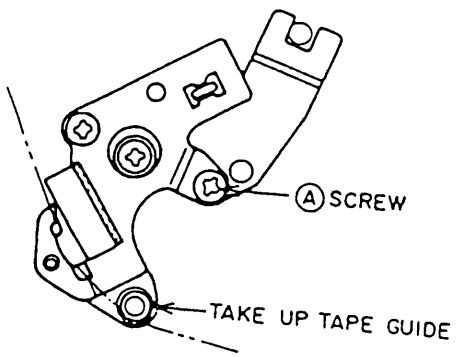


Fig.4-13

4-3-2. Height adjustment

1) Play back the test tape TF-526HH (AT-751788).
2) Connect an oscilloscope's CH-1 to the AUDIO OUT on the rear panel and CH-2 to the TP301 (CTL OUT) on the MAIN (A) PCB.
3) Turn the hexagon screw to obtain 1/2 of the output level of either CH-1 or CH-2 whichever has an output signal as shown in Fig.4-14.
   Then set both of the oscilloscope's channels to 100mV/div and finely adjust the hexagon screw until both signals of CH-1 and CH-2 are nearly the same level.
4) Slightly turn the Ⓐ screw until the tape edge barely touches the lower part of the TAKE-UP TAPE GUIDE without any curl or wrinkle as shown in Fig.4-3.
5) Adjust the head azimuth again. (Turning the hexagon screw or Ⓐ screw will cause head azimuth mis-alignment. Refer to 4-3-1. Azimuth adjustment.)
6) Confirm that both signals of CH-1 and CH-2 are nearly the same level (Confirm that neither of the CH-1 or CH-2 output level exceed 100mVp-p). If the result is not satisfactory,repeat steps 3) to 5).

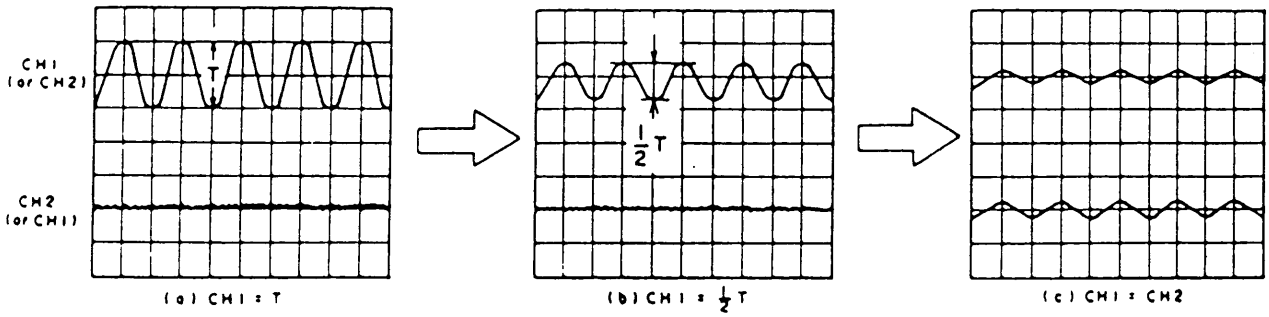


Fig. 4-14

4-3-3. phase adjustment

1) Connect an oscilloscope's CH-1 to the TR510 emitter (ENVE) on the MAIN (A) PCB and CH-2 to the TP1 (VSWP) on the PRE AMP PCB for triggering.
2) Play back the reference tape TF-530RFS (AT-751775).
3) Press one of the TRACKING buttons on the remote control until the "x" mark can be seen in the center position of the tracking range on the TV screen as shown in Fig.4-15.

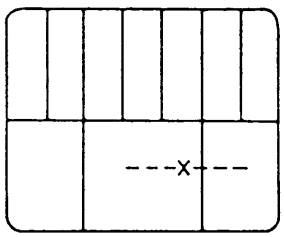


Fig. 4-15

4) Loosen the © screw slightly so that the A/C HEAD PLATE can be moved with reasonable tightness.
5) Insert a sharp flat head (—) screwdriver into the A/C HEAD BASE and Ⓐ hole as shown in Fig.4-17.
6) Move the A/C HEAD BASE by moving a screwdriver in the direction of the arrow as shown in Fig.4-17 to obtain the maximum RF output, then tighten the © screw.

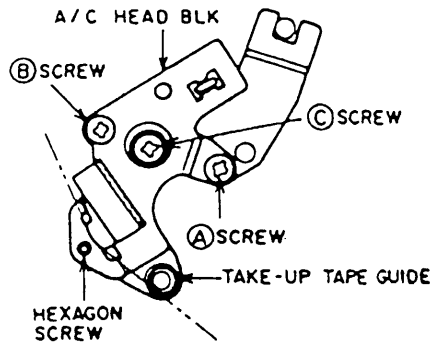


Fig. 4-16

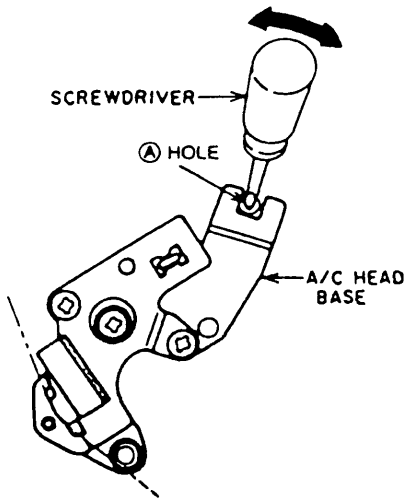


Fig. 4-17

V. ELECTRICAL ADJUSTMENT

Precautionary items prior to adjustments
1. The color bar generator output should be 1.0 Vp-p
2. The video output terminal should be terminated with 75 ohms (connect dummy load or 75 ohms input TV.)

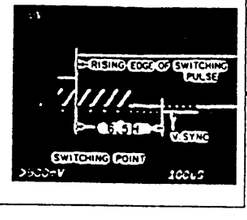
Required following test tapes.

Test tape	Parts No.
TF-527BL	AT-711880
TF-530RFS	AT-751775
TF-532CBS	AT-751360

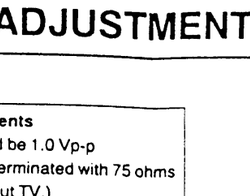
STEP	ADJUSTMENT ITEM
1.	MODE and INPUT SIGNAL / TEST TAPE
2.	TEST POINT and ADJ part
3.	REMARKS (•) & RESULT (✳)

ADJ. part
Test point

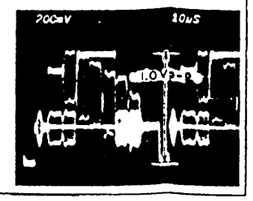
1 PB SWITCHING POINT
1. "PB", test tape TF-530RFS
2. TP1 (SWP), VIDEO OUT & VR301 (SW. POINT)
3. • Connect an oscilloscop's CH-1 to TP1 (SWP) for triggering and CH-2 to VIDEO OUT
   ✳ Adjust VR301 so that the switching point is positioned 6.5 H from the V-SYNC left edge as shown.



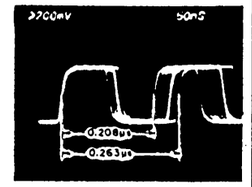
6 VIDEO REC CURRENT
1. "REC",PAL color bar signal
2. P2 (REC. CURR), JW188 (C. SYNC) & VR1 (REC-CHROMA), VR2 (REC-Y)
3. • Connect an oscilloscope's CH-1 to P2 (REC.CURR) and CH-2 to JW188 (C.SYNC) for triggering.
   • Turn the VR2 (REC-Y) fully counterclockwies.
   ✳ Adjust VR1 (REC-CHROMA) so that the chroma REC current becomes 140 mVp-p at the burst signal area.
   ✳ Disconnect the input signal, then adjust VR2 (REC-Y) so that Y REC current becomes 3.6 Vp-p.

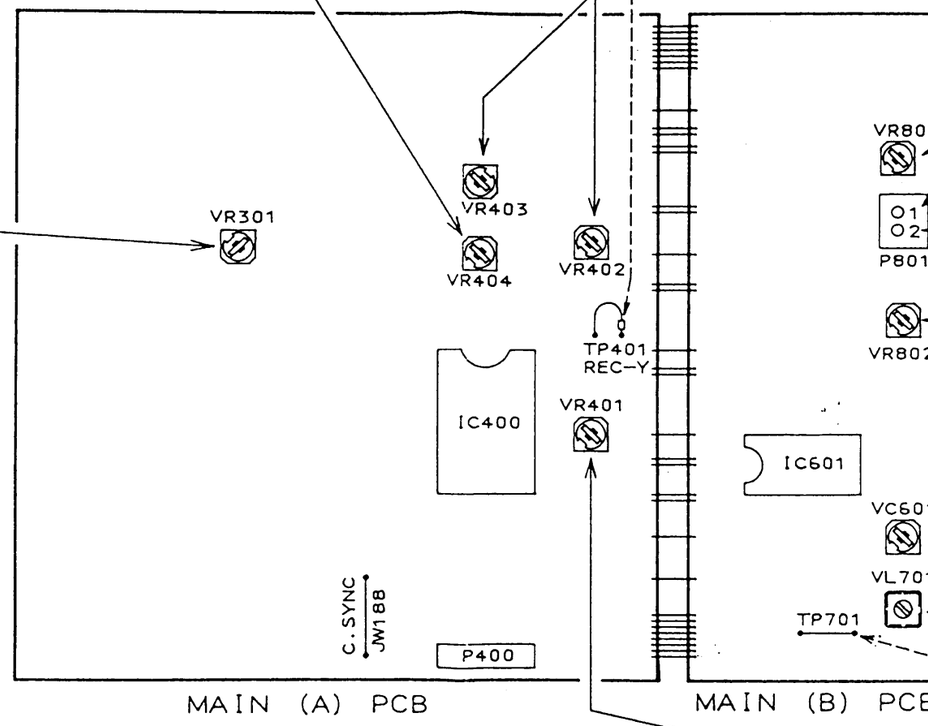


7 VIDEO PB LEVEL
1. "REC"-"PB", PAL color bar signal
2. VIDEO OUT & VR404 (PB LEVEL)
3. • Connect an oscilloscope to VIDEO OUT
   • Make some recording on the tape, then play it back
   ✳ Adjust VR404 so that PB level becomes 1.0 Vp-p



5 CARRIER SET & DEVATION
1. "REC", PAL color bar signal
2. TP401 (REC.Y) & VR402 (CARRIER), VR403 (DEVIATION)
3. • Connect an oscilloscope to TP401 (REC. Y)
   • VR402 (CARRIER) : 0.263 μs (3.8 MHz)
   ✳ VR403 (DEVIATION) : 0.208 μs (4.8 MHz)





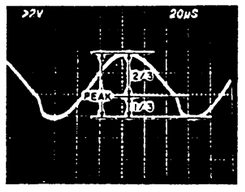
3 AUDIO REC BIAS
1. "REC", No signal input
2. P801 ① pin, ② pin & VR801
3. • Connect an AC voltmeter to P801 ① pin (GND side) and ② pin. (Do not connect the AC voltmeter's ground to the VCR's ground.)
   ✳ Adjust VR801 so that the reading on the AC voltmeter becomes 2.4 mV

2 AUDIO PB LEVEL
1. "PB", test tape TF-527BL
2. AUDIO OUT & VR802
3. • Connect AC voltmeter to AUDIO OUT
   ✳ —5 dBs

8 CHARACTER POSITION
1. "E-E" (STOP mode), No signal input
2. VIDEO OUT, TV screen & VC601 (IMS)
3. • Press "DISPLAY" button once on the remote control to display elapsed tape couter.
   • Connect an oscilloscope to VIDEO OUT
   ✳ Adjust VC601 (IMS) so that right end of the IMS signal becomes 49 μs from the H-SYNC as shown.

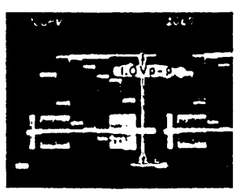
ON THE SCREEN

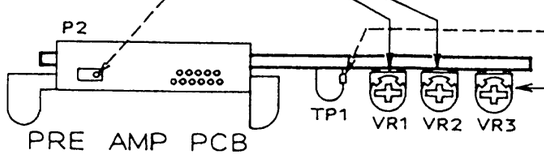
9 P / S AUTO SENSITIVITY (EM ONLY)
1. "E-E" (stop mode), SECAM color bar signal
2. TP701 (P / S SENS), VL701 (P / S SENS)
3. • Connect an oscilloscope to TP701 (P / S SENS).
   ✳ Adjust the VL701 so that distorted point of the waveform becmes 1/3 from the bottom as shown.



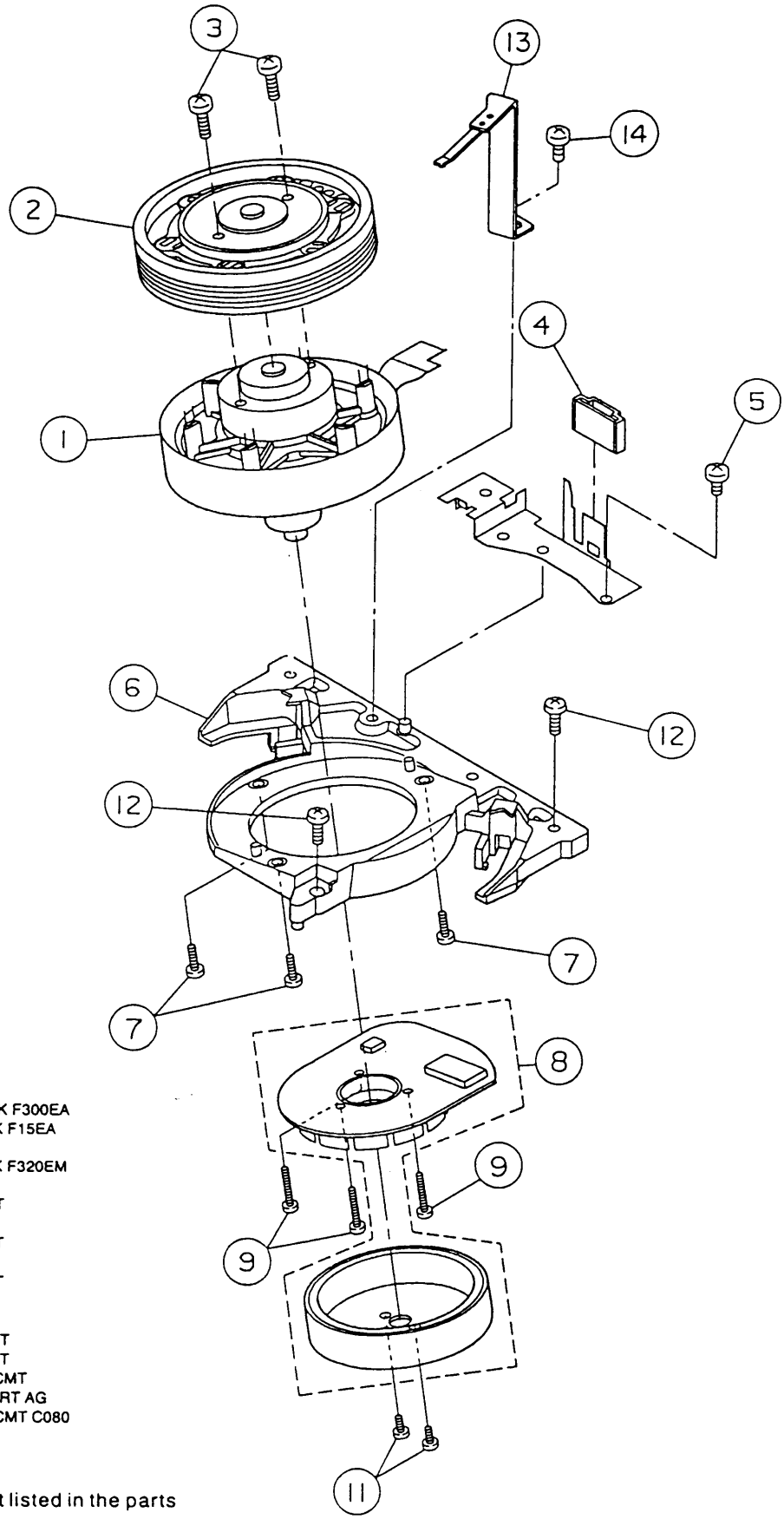
10 ENV. DET (I-HQ)
[This adjustment should be performed in the "TEST mode".]
To set the VCR to the TEST MODE, press and hold both the "POWER" and "EJECT" button on the front panel, then plug in the AC power cord. The TEST MODE can be cancelled by disconnecting the AC power cord or simply by pressing the SYSTEM RESET button.
1. Record PAL color bar signal on a normal type blank tape and then play it back.
2. Observe the number which displayed on the minute part of the FL display.
3. Adjust the VR3 so that the number displayed on the FL diplay becomes 88.

4 VIDEO E-E LEVEL
1. "E-E" (STOP mode), PAL color bar signal
2. VIDEO OUT & VR401 (E-E LEVEL)
3. • Connect an oscilloscope to VIDEO OUT.
   ✳ 1.0 Vp-p





HEAD DRUM BLOCK

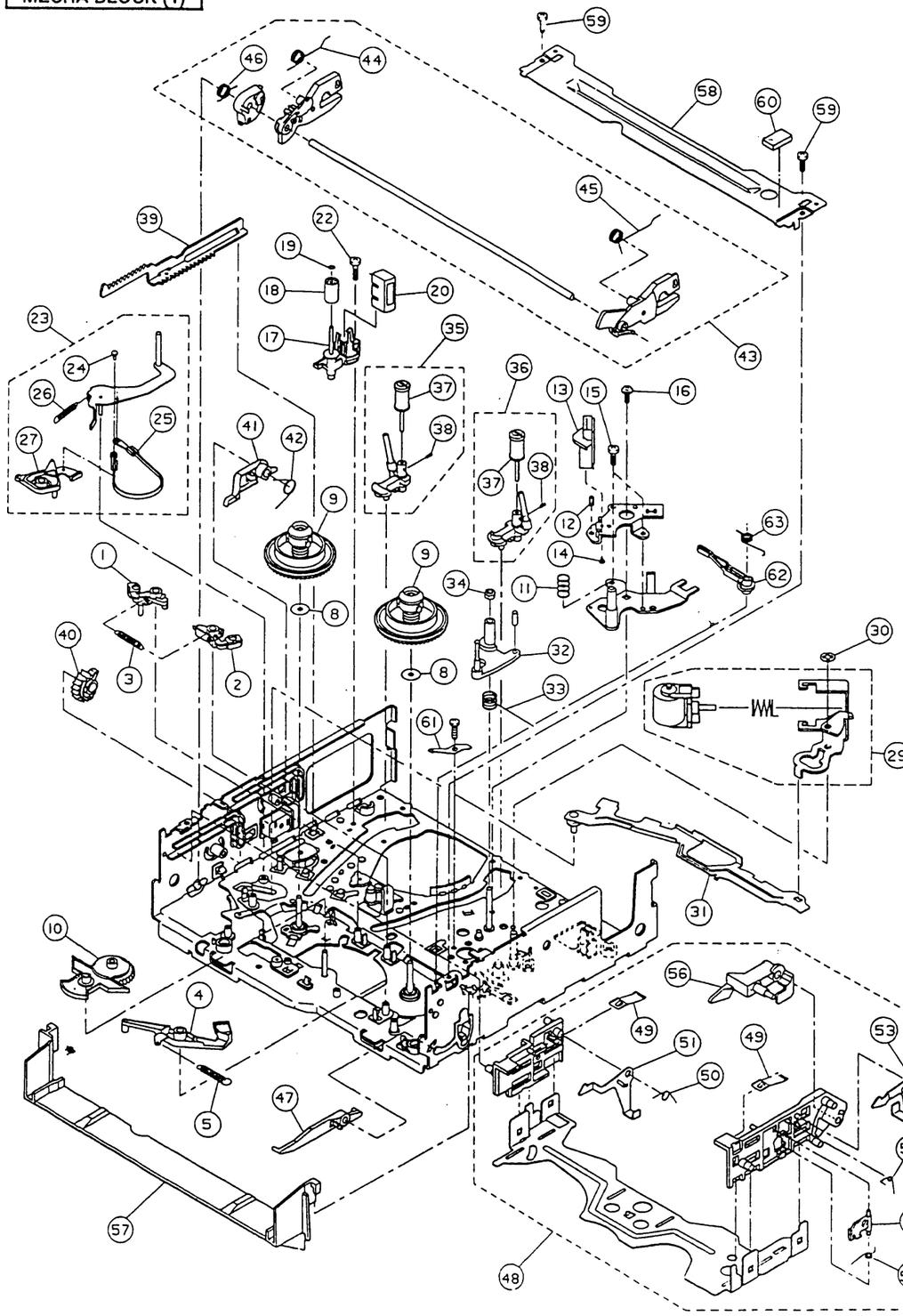


2. HEAD DRUM BLOCK

Ref.No.	Part No.	Description
1	BV-V1123A410D	LOWER DRUM BLK F300EA
2A	BV-V1102A420G	UPPER DRUM BLK F15EA [EXCEPT EM]
2B	BV-V1102A420H	UPPER DRUM BLK F320EM [EM]
3	ZS-321298	BID30X08STL CMT
4	SZ-387388J	HOLDER FPC
5	ZS-379405	BID30X06STL CMT
6	MA-387474J2	BASE DRUM
7	ZS-563444	BID26X08STL CMT
8	BM-401296J	MOTOR E20EL89 [DRUM MOTOR]
9	ZS-467796	PAN26X12STL CMT
11	ZS-379350	PAN30X06STL CMT
12	ZS-336714	ST BID30X12STL CMT
13	VT-401282J	EARTH BRUSH PART AG
14	ZS-389853J	DT BID30X06STL CMT C080

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

MECHA BLOCK (1)



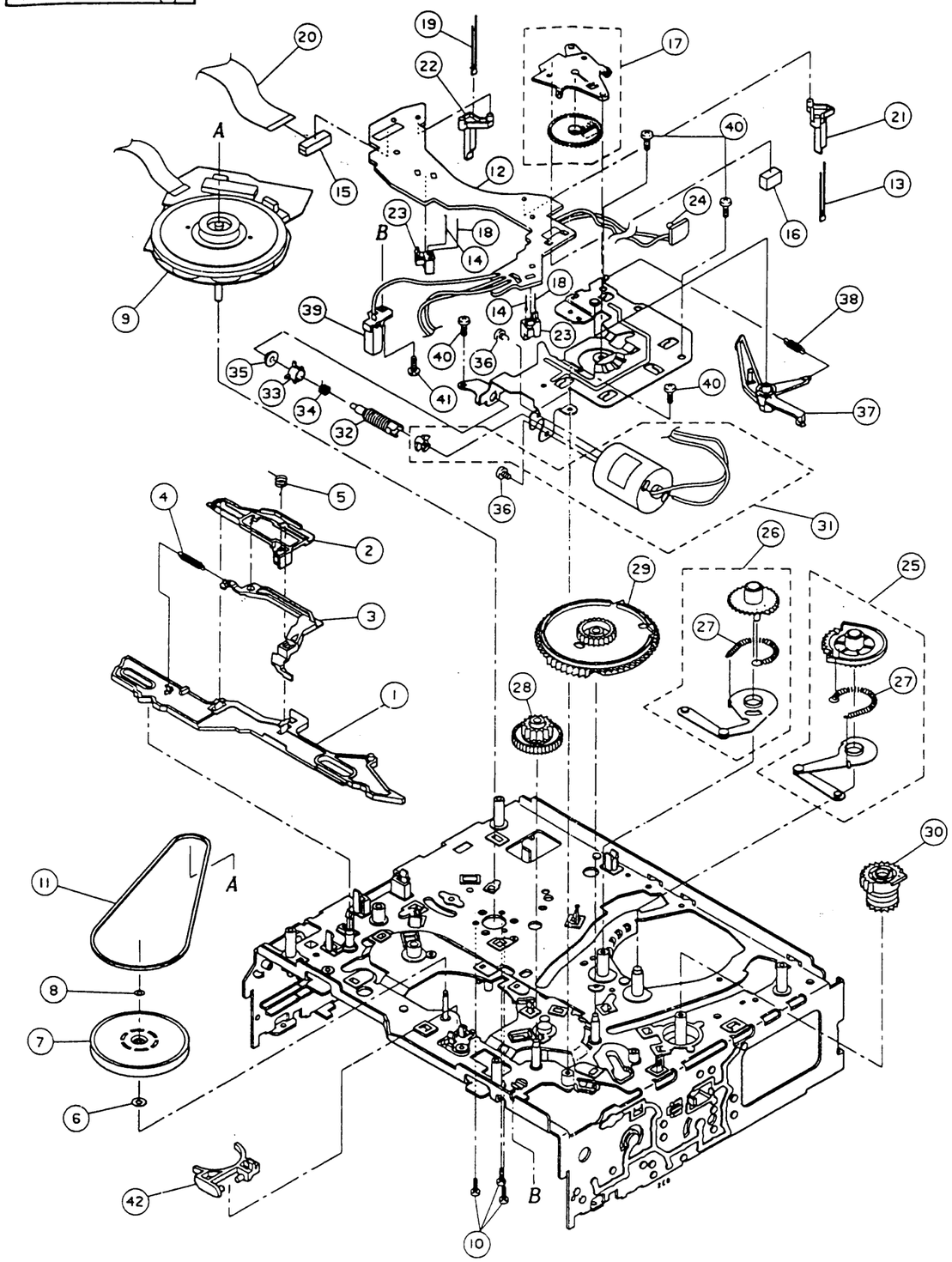
3. MECHA BLOCK (1)

Ref.No.	Part No.	Description
1	ML-387316J	MAIN BRAKE (S) PART
2	ML-387318J	MAIN BRAKE (T) PART
3	ZG-387320J	SP PULL MAIN BRAKE
4	ML-387321J	REVIEW BRAKE PART
5	ZG-387323J	SP PULL REVIEW BRAKE
8	ZW-389814J	PW31X110X050PSL
9	MT-390954J1	DISK (2) PART
10	MI-387294J	IDLLER PART
11	ZG-387438J1	SP PUSH A/C
12	ZG-373900	6SET30X080SCM PKR CP
13	HR-405340J	HEAD COMBO HVMZA1121A
14	ZS-404844J	PAN20X02STL BZN PS1
15	ZS-321298	BID30X08STL CMT
16	ZS-389853J	DT BID30X06STL CMT C080
17	MZ-402760J	HOLDER FE HEAD PART B
18	MR-387286J1	ROLLER IMPEDANCE
19	ZW-374445	SLIT W17X032X025PSL
20	HE-390013J	HEAD E HVFME0020A
22	ZS-336714	ST BID30X12STL CMT
23	BL-V1123A050A	TENSION ARM BLK F600EA
24	SZ-387263J2	HOLDER LEVER TENSION
25	ML-390768J1	TENSION BAND PART
26	ZG-395470J	SP PULL TENSION (2)
27	ML-395471J1	TENSION BRAKE PART
29	BL-V1102A160A	ARM PINCH ROLLER (2) BLK 425EA
30	ZW-332843	RETAINING RING GRIP 380STL ACP
31	ML-387431J1	SLIDER PINCH PART
32	ML-387277J3	ARM REVIEW PART
33	ZG-387282J	SP TORSION REVIEW
34	ZW-401776J	NUT REVIEW
35	BV-V1102A070A	LEADER S BLK 425EA
36	BV-V1102A080A	LEADER T BLK 425EA
37	VT-387394J1	GUIDE ROLLER D8 PART
38	ZS-374458	6SET20X030SCM PKR FP
39	ML-387428J	SLIDER FRONT LOADING
40	MZ-387335J	GEAR EJECT
41	ML-391745J2	ARM DAMPER
42	ZG-395567J	SP TORSION ARM DAMPER
43	BL-V1102A140A	ARM LOADING BLK 425EA
44	ZG-387417J	SP TORSION LOAD (S)
45	ZG-387418J	SP TORSION LOAD (T)
46	ZG-392831J	SP TORSION JOINT (2)
47	ML-387350J1	ARM LID OPENER
48	BV-V1102A150A	CASSETTE LOAD BLK 425EA
49	ZG-387348J1	SP PLATE HOLDER
50	ZG-387421J	SP TORSION DAMPER (S)
51	ML-387345J	LEVER DAMPER (S)
52	ZG-388290J1	SP TORSION DAMPER (T)
53	ML-387346J	LEVER DAMPER (T)
54	ML-387344J	LEVER LOCK RELEASE
55	ZG-387420J	SP TORSION RELEASE
56	ML-387349J2	ARM SHUTTER
57	SE-395554J	GUIDE FRONT (2)
58	MZ-387351J1	PLATE UPPER
59	ZS-358936	ST BID30X06STL CMT
60	SZ-391866J1	CUSHION COVER
61	ZG-392294J	SP PLATE EARTH
62	MZ-404539J	REW BRAKE PART
63	ZG-404541J	SP TORSION REW BRAKE
63	BB-V1130A020B	MECHA DECK BLK F300EA

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

4. MECHA BLOCK (2)

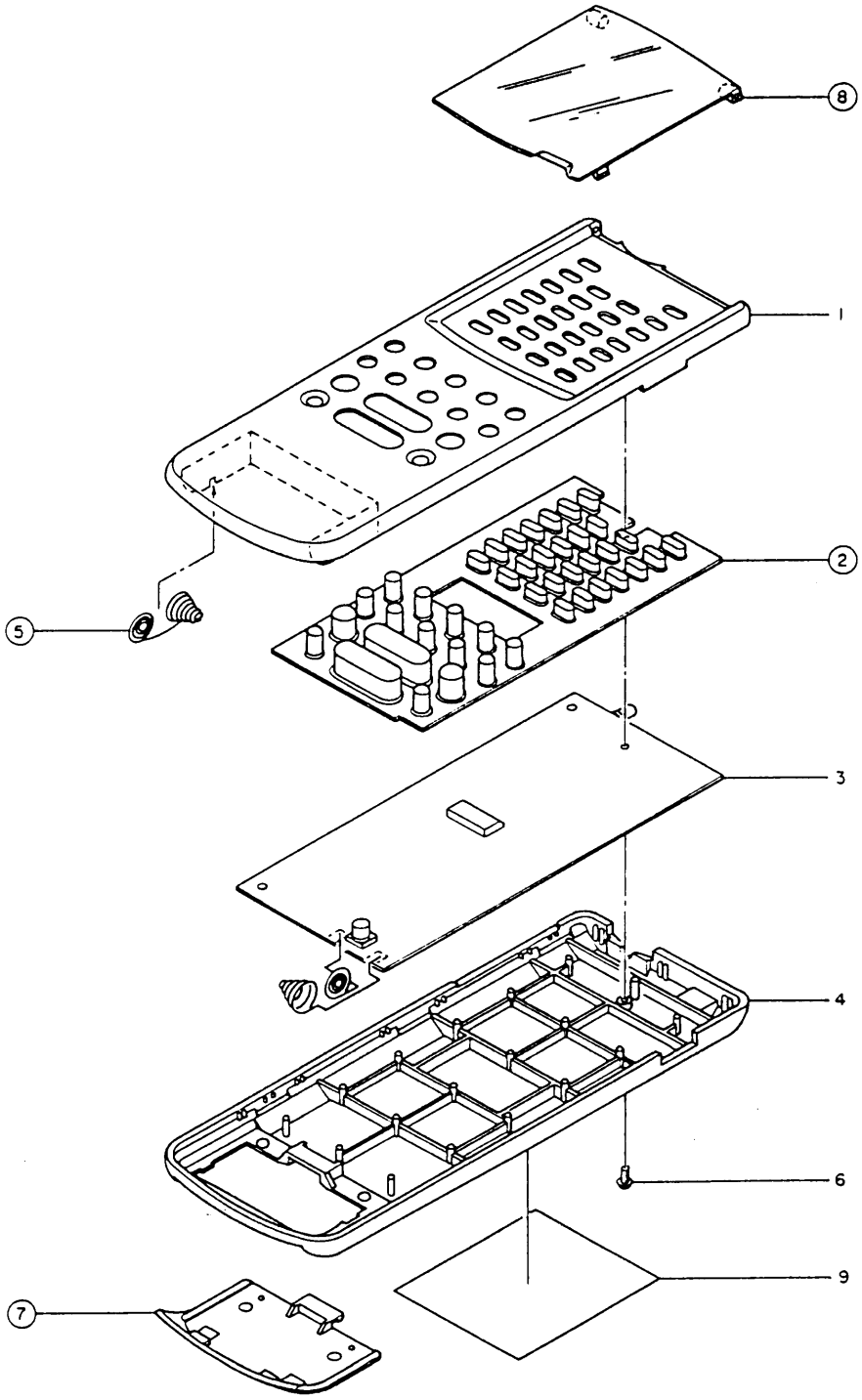
MECHA BLOCK (2)



Ref.No.	Part No.	Description
1	ML-396018J	SLIDER BRAKE (2) PART
2	ML-404944J	SLIDER TRIGGER (2)
3	ML-387402J1	LEVER TRIGGER
4	ZG-387468J	SP PULL SLIDER
5	ZG-387403J	SP TORSION COUPLING
6	ZW-389923J	PW26X060X050PSL
7	MZ-387298J3	DISK CLUTCH PART
8	ZW-387492J	SLIT W21X040X050PSL
9	BM-400682J1	MOTOR DFX-67B3VWB1 [CAPSTAN MOTOR]
10	ZS-365149	PT BID26X06STL CMT
11	MB-387289J	BELT CAPSTAN
12	EA-387496J	PC (#) SENSOR
13	ED-390011J	D LED GL451 INFRARED [D1]
14	ED-390012J	D LED GL4800 INFRARED [D2][D3]
15	EJ-387497J	SOCKET HOUSING 5062-30-10-13 [PS1]
16	EJ-381837J	SOCKET 174074-5 5P [P1]
17	ES-387465J	SW MODE SELECT MMS00070ZLBO [SW1]
18	ET-390010J	TR PHOTO PT4800 [TR2][TR3]
19	ET-390009J	TR PHOTO PT493F [TR4]
20	EW-389313J	CORD FFC P1.25 L=120 13P [WP1]
21	MZ-387430J	HOLDER D-LED
22	MZ-387445J	HOLDER S SENSOR
23	MZ-387446J	HOLDER PHOTO SENSOR
24	ET-361490	TR PHOTO PN268 [TR1]
25	MZ-V1102A090A	GEAR TOGGLE (S) BLK 425EA
26	MZ-V1102A100A	GEAR TOGGLE (T) BLK 425EA
27	ZG-387413J1	SP PULL TOGGLE
28	MZ-387332J	GEAR WORM WHEEL
29	MZ-396021J	GEAR CAM SLIDER (2)
30	MZ-387333J	GEAR FRONT LOADING
31	BM-387503J	MOTOR PART [LOADING MOTOR]
32	MZ-401686J	GEAR WORM (2)
33	MR-391968J	PULLEY TRIGGER (2)
34	ZG-387443J	SP TRIGGER
35	MR-404544J	HOLDER THRUST WORM (2)
36	ZS-425981	BID30X03STL CMT
37	BL-387458J2	CAPSTAN BRAKE PART
38	ZG-387502J	SP PULL CAPSTAN BRAKE
39	ES-373099	SW LEAF MTS10110MPC1
40	ZS-389950J	PT BID26X10STL CMT
41	ZS-358936	ST BID30X06STL CMT
42	ML-387311J2	ARM COUPLING

NOTE:
Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

REMOCON RC-V200E/V300E



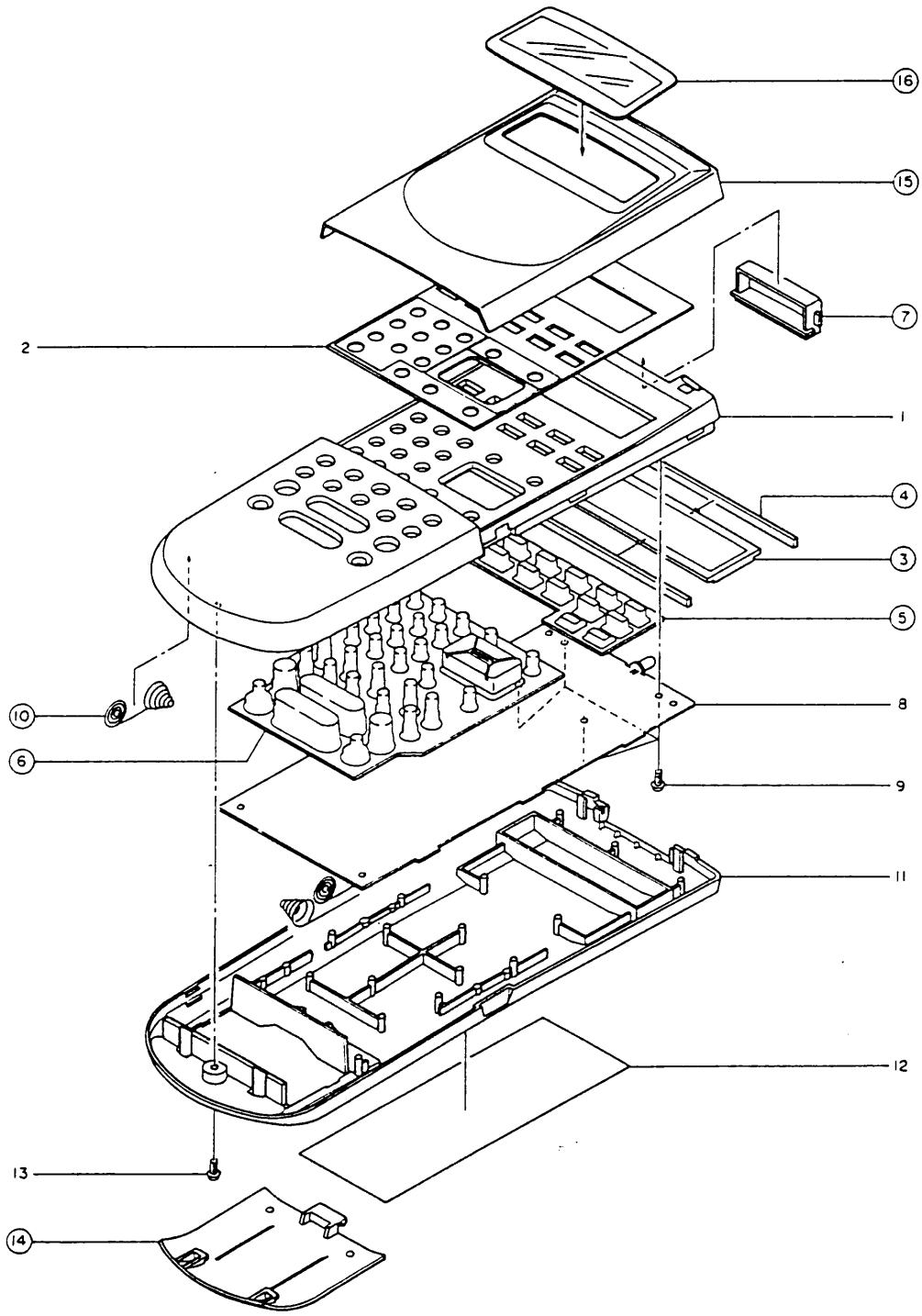
18. REMOCON RC-V200E/V300E

Ref.No.	Part No.	Description
2	MB-402705J	KEY RUBBER
5	ZG-394389J	TERMINAL BATTERY (Q3)
7	SC-394382J	COVER BATTERY (N)-2
8	SP-394383J1	DOOR PANEL

19. REMOCON P.C BOARD RC-V200E/V300E

Ref.No.	Part No.	Description
D1	ED-390686J	D LED TLN105B INFRARED
D2	ED-386031J	D SILICON CHIP MA110-TW
D3	ED-386031J	D SILICON CHIP MA110-TW
D4	ED-386031J	D SILICON CHIP MA110-TW
IC1	EI-376112	IC UPD6122G
TR1	ET-390826J	TR.CHIP 2SD1619 T,U TC T08
X1	EI-390687J	OSC CE CSU455PL 455KHZ
1	ZG-402706J	TERMINAL BATTERY (U1)
2	ZG-402685J	TERMINAL BATTERY (U2)

REMOCON RC-V302E



20. REMOCON RC-V302E

Ref.No.	Part No.	Description
3	EM-403448J	IND LCD LF5381G ENGLISH
4	EJ-403095J	TERMINAL LCD (3) B1024
5	MB-403107J	KEY RUBBER (S2)
6	MB-403125J	KEY RUBBER (L)
7	SE-403111J	FILTER
10	ZG-403100J	TERMINAL BATTERY (+-)
14	SC-403133J	COVER BATTERY
15	SP-403126J1	DOOR PANEL (L)
16	SP-403096J	WINDOW LCD

21. REMOCON P.C BOARD RC-V302E

Ref.No.	Part No.	Description
D1	ED-403450J	D LED SE303ARF-C INFRARED
IC1	EI-405245J	IC M50933-123FP HKHREM3
IC2	EI-400672J	IC S-8052ALB-LE
TR1	ET-390826J	TR.CHIP 2SD1619 T,U TC T08
X1	EI-368825	OSC XTAL MX-38T 32.768KHZ
X2	EI-403451J	OSC CE CSB1200J 1.200MHZ
1	ZG-403098J	TERMINAL BATTERY (+)
2	ZG-403099J	TERMINAL BATTERY (-)

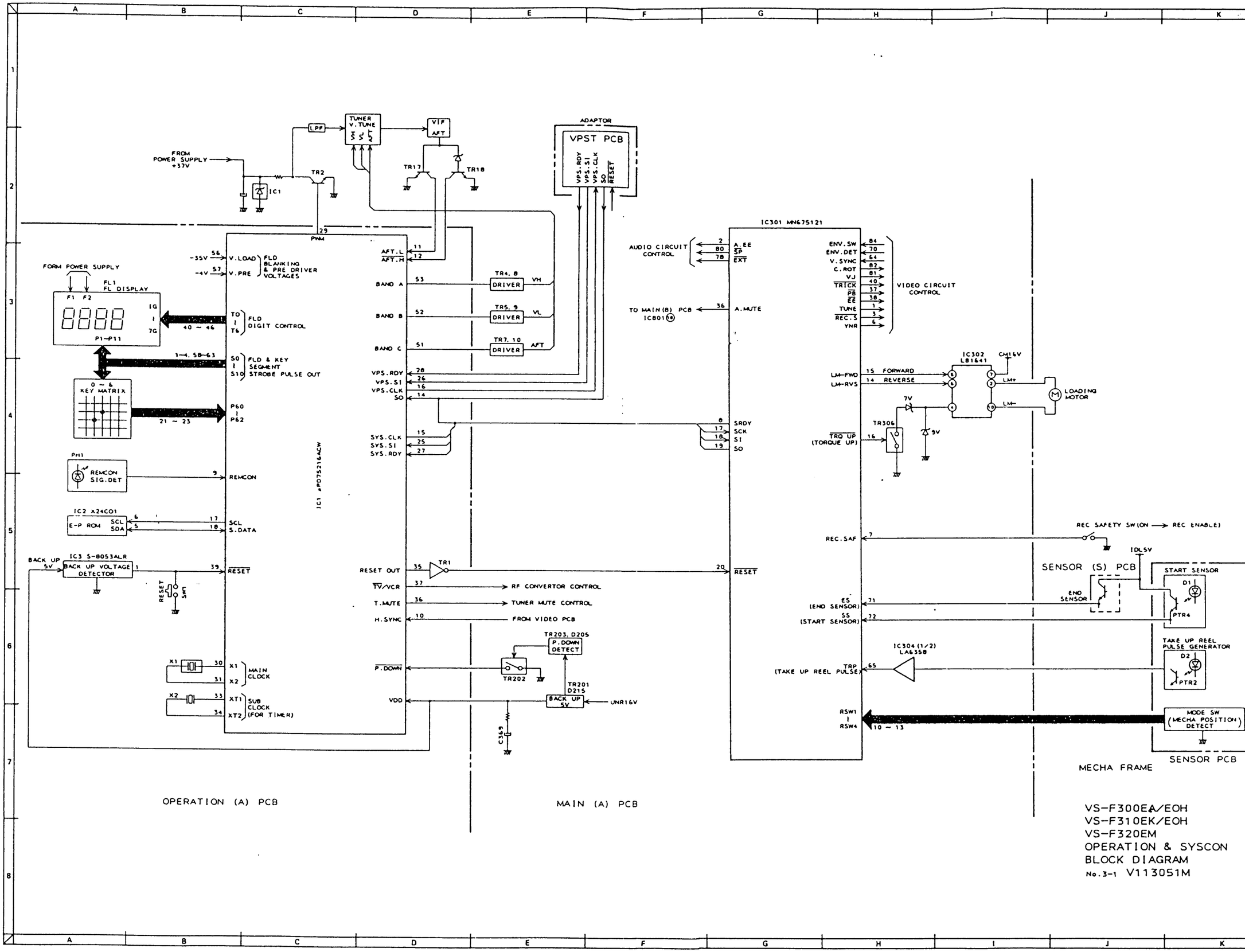
AKAI

MODEL VS-F300EA/EOH
MODEL VS-F310EK/EOH
MODEL VS-F320EM

SCHEMATIC DIAGRAMS AND PC BOARDS

TABLE OF CONTENTS

Use the following schematic diagrams and PC boards together with the provided service manual.



VS-F300EA/EOH
VS-F310EK/EOH
VS-F320EM
OPERATION & SYSCON
BLOCK DIAGRAM
No.3-1 V113051M

OSC OUT

IMS VIDEO IN (PB)

REC Y IN

PB VIDEO OUT

MAIN (B) PCB

PRE AMP PCB

MAIN (A) PCB

REC CHROMA SIGNAL LINE
PB CHROMA SIGNAL LINE
REC Y SIGNAL LINE
PB Y SIGNAL LINE
AUDIO REC SIGNAL LINE
AUDIO PB SIGNAL LINE

VIDEO SWP

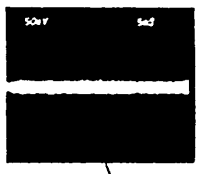
CHROMA ENVE

MAIN DE-EMPHA OUT (REC)

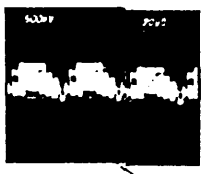
MAIN DE-EMPHA OUT (PB)

REEC CLAM

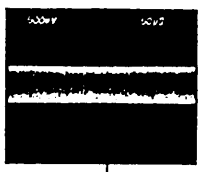
REC Y IN



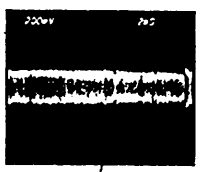
PB VIDEO) OUT



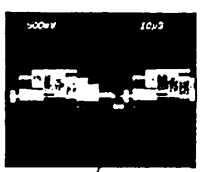
REC Y OUT



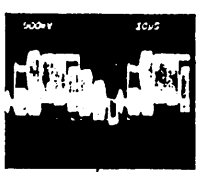
PB FM IN



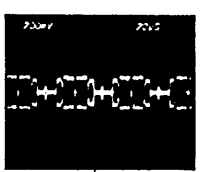
REC VIDEO IN



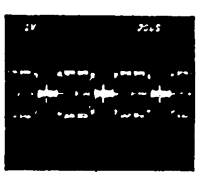
PB VIDEO OUT



PB 4.43MHz IN



PB 4.43MHz OUT



EK.EO.EOH ONLY

PJ102

A.IN
A.OUT
V.IN
V.OUT

TR106
TR107
VIDEO SIGNAL
AUDIO SIGNAL

VIF UNIT
A.OUT
V.OUT
IF
TV TUNER
RF CONVERTER
ANT IN
RF OUT

IC101
HD14053BP

TR103
T.MUTE
(FROM OPERATION MI-COM 44)

EXT
IC301 28

TR104

EM ONLY

DL501
BPF 4.43MHz
TR505
DL500
BPF 4.43MHz
TR504
TR503

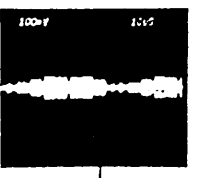
V.SYNC

VR401
EE LEVEL

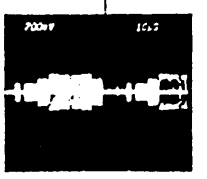
IC400 2
TO SERVO MI-COM 5

MOD IN
SP/LP
1/2FH CARSH
VIDEO
VCC1
VIDEO AMP
QV/QHINS CHAR INS W/D CLIP
FBC
4.2V REG
AMP 6dB
P/S DET
COMB
321FH VCO
SLD
AGC DET
VIDEO AGC
PB AMP B.DEEM KILLER
KIL
4.43 BPF
MES
BQP1
KIL-DET ID-DET
1/8
BQP2
V/C MIX
ATT -1dB
FM MOD
LPF
DOUBLE LIMIT
DOC DET
CLAMP
6DB
SYNC SEP
DELAY
FM DEMOD
SUB LPF
200NS
IC400
LA7391
COMB DRIVER AMP
PAL1148 NT 568
PB APC DET
REC APC DET
90 P.S
PICTURE CONTROL
HALF H. KILLER
BQP GEN
1/2
DOCO
NL DE EMPH
WHP NOICAN
20pin CONT
B.G
ACC DET
CORR
LIM
K
CLAMP
M1500NS
3.5MHz LPF
275NS
4.43M BPF
PAL
4PHASE SHIFTER
RF SW
ACC. DET AMP
BURST EMPH
MAIN CONV
5.06M BPF
SUB CONV
BALANCER
3RDLOCK PROTECT
1MHZ LPF
REC APC DET
XO
VXO
XT
XO IN
XO OUT
X500
CONT
NC.VOL CONTROL
TR506
W/D CLIP
MAIN DE EMPH
MAIN EMPH
NL EMPH
DETAIL EM-1
VCA
ATT
6DB
GND
PB LEVEL
TR406
TR407
EF
IC401
LC8992
CCD 1H DELAY LINE
CLK
TR404
TR471
TR470
H·ON
TR421
YNR
IC301 6
TRICK·ON
TR501
TR304
TRICK
(FROM SERVO MI-COM 36)
IDLSV
TR423
PICT
(FROM SERVO MI-COM 18)
TR403
TR410
TR508
IDLSV
PB·OFF
TR401
EE
(FROM SERVO MI-COM
VCC
IC400 32
TUNE
IC301 1
(FROM SERVO MI-COM)
TR509
TR512
TR511
TR510
PB.C
REC.Y
PB.Y
VR403
DEV
IC400 LA7391 (Y/C SIGNAL PROCES)
ENV SW
IC301 34
EXCEPT EM
IC403
BU4013B
FLIP-FLOP
TR417
ENV DET
IC301 17
IDLSV
FROM SERVO
IC 301 28
MI-COM
TR416
REC.S
(REC:ON)
IC301 4
IC301 3
IC301 2
PBSV

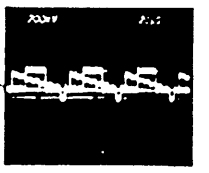
PB CHROMA OUT



REC CHROMA IN

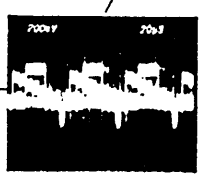


CCD IN (PB)

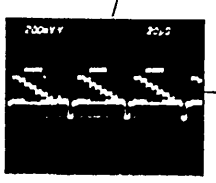


MAIN (A) PCB

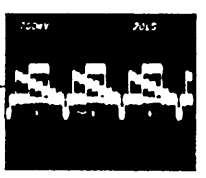
MAIN DE-EMPHA OUT (REC)



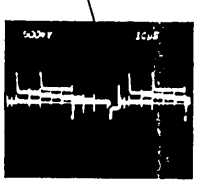
MAIN DE-EMPHA OUT (PB)



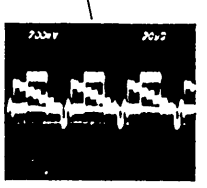
REEC CLAMP IN



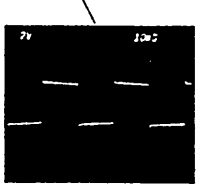
PB CLAMP IN



MAIN EMPHA OUT (REC)

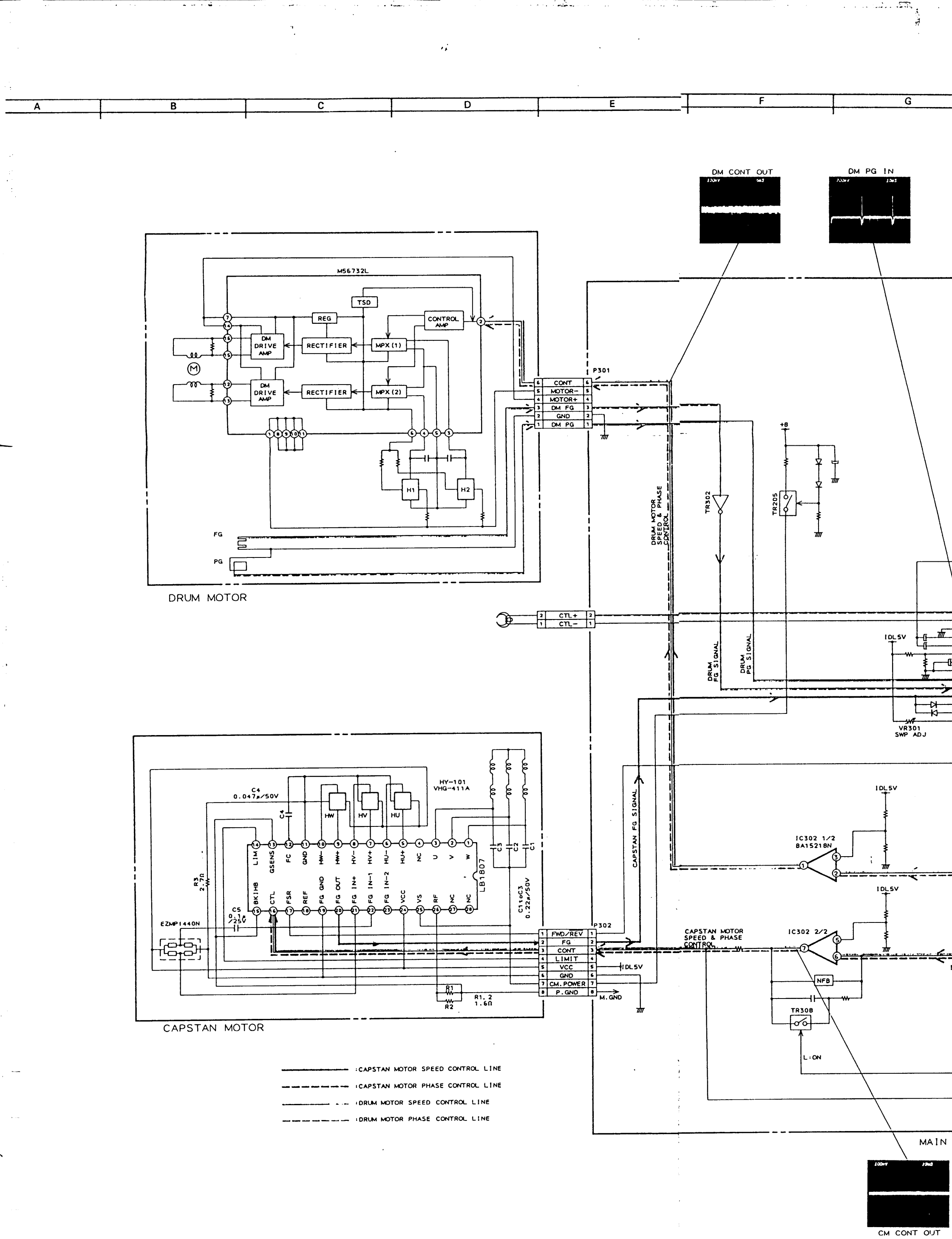


CCD FILTER OUT (PB)

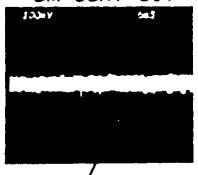


CCD OUT (PB)

VS-F300EA/EOH
VS-F310EK/EOH
VS-F320EM
VIDEO & AUDIO
BLOCK DIAGRAM
No.3-2 V113251M

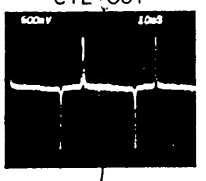

A
B
C
D
E
F
G
DM CONT OUT
DM PG IN
M56732L
TSD
REG
CONTROL AMP
DM DRIVE AMP
RECTIFIER
MPX (1)
MPX (2)
H1
H2
FG
PG
DRUM MOTOR
P301
CONT
MOTOR−
MOTOR+
DM FG
GND
DM PG
CTL+
CTL−
+B
TR302
TR205
DRUM MOTOR SPEED & PHASE CONTROL
DRUM FG SIGNAL
DRUM PG SIGNAL
IDL5V
VR301 SWP ADJ
HY-101 VHG-411A
C4 0.047μ/50V
HW
HV
HU
LB1807
LIM
GSENS
FC
GND
HW−
HW+
HV−
HV+
HU−
HU+
NC
U
V
W
C1 to C3 0.22μ/50V
R3 2.7Ω
C5 0.1μ/25V
EZMP1440N
BK1HB
CTL
FSR
REF
FG GND
FG OUT
FG IN+
FG IN−1
FG IN−2
VCC
VS
RF
NC
NC
P302
FWD/REV
FG
CONT
LIMIT
VCC
GND
CM. POWER
P. GND
M. GND
R1
R2
R1. 2 1.6Ω
CAPSTAN MOTOR
CAPSTAN FG SIGNAL
IC302 1/2 BA15218N
IC302 2/2
CAPSTAN MOTOR SPEED & PHASE CONTROL
NFB
TR308
L:ON
:CAPSTAN MOTOR SPEED CONTROL LINE
:CAPSTAN MOTOR PHASE CONTROL LINE
:DRUM MOTOR SPEED CONTROL LINE
:DRUM MOTOR PHASE CONTROL LINE
MAIN
CM CONT OUT

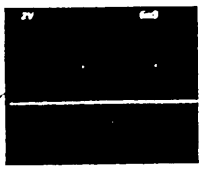
DM CONT OUT



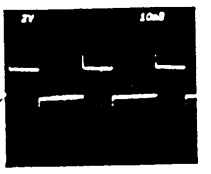
DM PG IN

CTL OUT

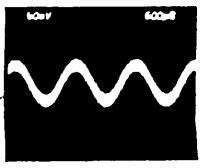




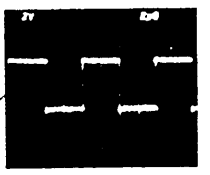
V.SYNC



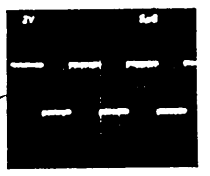
REC CTL SIGNAL



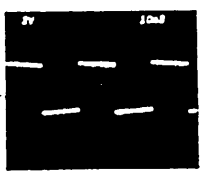
DM FG IN
f=599.79Hz



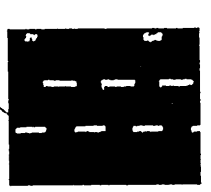
DM SPEED
ERROR PULSE



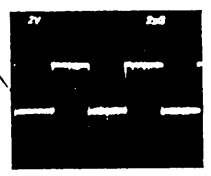
DM PHASE
ERROR PULSE



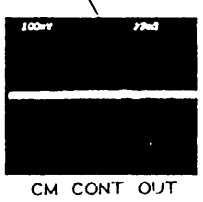
VIDEO SEITCHING PULSE



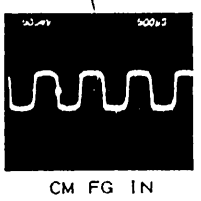
CM PHASE
ERROR PULSE



CM SPEED
ERROR PULSE



CM CONT OUT



CM FG IN

MAIN (A) PCB

VS-F300EA/EOH
VS-F310EK/EOH
VS-F320EM
SERVO
BLOCK DIAGRAM
No.3-3 V113053M

POWER SUPPLY (2) PCB
V1130A506B
(EM ONLY)

POWER SUPPLY PCB
V1130B5040
POWER SUPPLY (1) PCB
V1130B506A
(EM ONLY)

P1: GND, OPE 5V, IDL 5V, GND, OPE 12V, IDL 12V, MOTOR 13V, UNR18V, +37V, -35V, AC4V, AC4V

EXCEPT EM
P1: GND, OPE 5V, IDL 5V, GND, OPE 12V, IDL 12V, MOTOR 13V, UNR18V, +37V, -35V, AC4V, AC4V

VPS/VPT PCB
EOG-V
(ADAPTOR : EO. EOH)

VPST ONLY
WP102: AFC H, GND

WP101: VPST ONLY — GND, VPT OUT, GND, VPST IN

WP103: A.GND, IDL 5V, IDL 12V

P104: RESET, VPS.RDY, VPS.SO, VPS.SI, VPS.CLK

VPS ONLY
WP101A: GND, VPST IN

WF201
1 GND
2 OPE 5V
3 IDL 5V
4 GND
5 OPE 12V
6 IDL 12V
7 MOTOR 13V
8 UNR18V
9 +37V
10 -35V
11 AC4V
12 AC4V

P1: A.GND, IDL 5V, IDL 12V
ADAPTOR

P1: FEH, GND
FULL ERASE

PRE AMP PCB
V1130B503A

P1: LP1, LP COM, LP2, SP1, SP COM, SP2
VIDEO HEADS

WP1
1 REC.C
2 PB.C
3 GND
4 NTSC
5 REC.Y
6 IDL 5V
7 V.SWP
8 REC.S.S
9 TUNE
10 ENV.DET
11 PB.Y
12 SEC.MES
13 TRICK
14 HA-SW
15 ENV-SW
16 PB 5

P41
1 REC.C
2 PB.C
3 GND
4 NTSC
5 REC.Y
6 IDL 5
7 V.SWP
8 REC.S.S
9 TUNE
10 ENV.DET
11 PB.Y
12 SEC.ME
13 TRICK
14 HA-SW
15 ENV-SW
16 PB 5

P301
1 PG
2 GND
3 FG
4 DM POW
5 M.GND
6 CONT

P1: LP1, LP COM, LP2, SP1, SP COM, SP2
P1: P G, GND, F G, DM POW, M.GND, CONT
DRUM MOTOR

P1: A/C PB, A/C REC, GND, S E, CTL-, CTL+
A/C HEAD

CAPSTAN MOTOR

P302
1 F/R
2 FG
3 CONT
4 LIMIT
5 IDL 5
6 GND
7 CM.POW
8 P.GND

MAIN (A) PC
V1130A50

CTL-, CTL+
WP801-2

P303
1 S.SEN
2 RSW.1
3 RSW.2
4 RSW.3
5 RSW.4
6 IDL 5
7 T.REEL.P
8 END.SEN
9 S.REEL.P
10 GND
11 LM+
12 LM-
13 REC.SAF

S.SEN, RSW.1, RSW.2, RSW.3, RSW.4, IDL5V, T.REEL.P, END.SEN, S.REEL.P, GND, LM+, LM-, REC.SAF
J1

MODE SELECT SW
P1: RSW 1, RSW 2, RSW 3, RSW 4, GND

REC SAFETY SW
LOADING MOTOR
RF-370C15370

PTR4
PT493F
PTR2
D1
GL451
D2
GL4800
R1
1/6W 62
JW1
JW2
PTR1
PN268

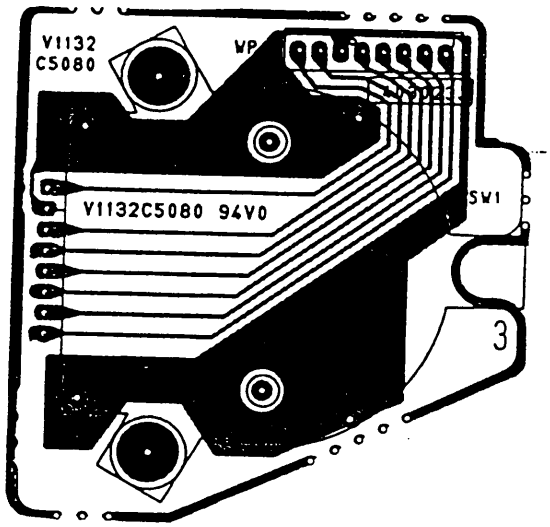
SENSOR PCB V1102A507A
SENSOR (S) PCB
V1102A507B

P304
-35, GND, AC4, PWM, BAND.B, P.DOWN, BAND.A, AFT-L, TV/VCR, AFT-H, AFT, BUP 5, T.MUTE, AC4, BAND.C

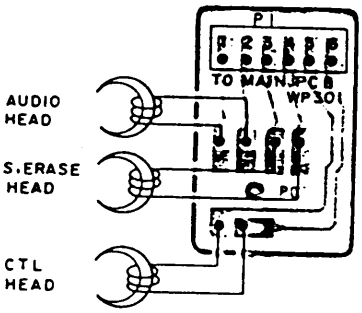
WP1
-35, GND, AC4, PWM, BAND.B, P.DOWN, BAND.A, AFT-L, TV/VCR, AFT-H, AFT, BUP 5, T.MUTE, AC4, BAND.C

OPERATION (A) PCB
V1330B5070 (E.A ONLY
OPERATION (D) PCB
V1132B5070 (EXCEPT

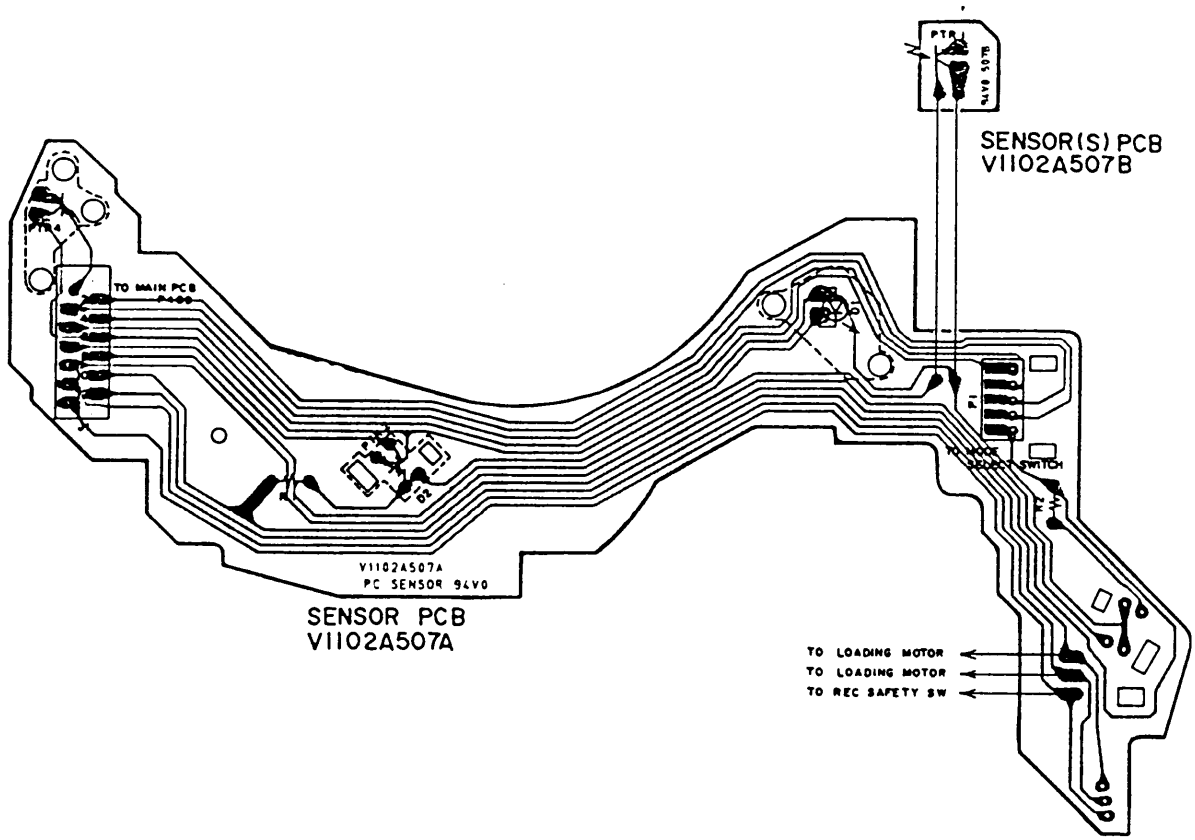
VPT PCB
V
PTOR:EO.EOH)
WP101
VPST ONLY
GND
VPT OUT
GND
VPST IN
VPS ONLY
GND
VPST IN
WP101A
P104
RESET
VPS.RDY
VPS.SO
VPS.SI
VPS.CLK
VIF UNIT
TV TUNER
RF CONVERTER
ANT IN
RF OUT
RF IN
VTR TV OUT
AFT
RF.AGC
V.OUT
GND
IF
VCC
A.OUT
U.AGC
V.AGC
U
TU
VH
AGC
VL
AFT
B
IF
VIDEO IN
AUDIO IN
+B
MOD
NC
+B
GND
GND
GND
J.V OUT
EXT
TO SD.V
P803
GND
FROM VPST
GND
TO VPST
ADAPTOR
P401
REC.C
PB.C
GND
NTSC
REC.Y
IDL 5
V.SWP
REC.S.5
TUNE
ENV.DET
PB.Y
SEC.MES
TRICK
HA-SW
ENV-SW
PB 5
V.GND
V.IN
IDL 9
A.IN
NT
A.OUT
A.MUTE
SP (NC)
A.REC
A.EE
ANC (NC)
TUNE (NC)
YNR (NC)
IDL 5
MESECAM
V.J.
1.V.OUT
GND
1/2 FH
PB C.OUT
PB H.C
AFC-H
SD.P
V.SYNC
GND
SD.C
BGP1
S.DATA
STB
CLK
WP801
A/C PB
GND
A/C REC
SE.H
P802
GND
FEH
P601
GND
AFC-H
MAIN (A) PCB
V1130A501A
CTL-
CTL+
WP801-2
MAIN (B) PCB
V1130A501B
P400
IDL 5
SYS.SO
RESET
S.RADY
H.SYNC
SYS.SI
SYS.CLK
GND
IMS.SO
IMS.CLK
IMS.STB
RESET
BAND.B
P.DOWN
BAND.A
AFT-L
TV/VCR
AFT-H
AFT
BUP 5
T.MUTE
AC4
BAND.C
WP1
WP2
WP3
VPS.CLK
VPS.SI
VPS.SO
VPS.RDY
RESET
ADAPTOR
EO EOG-V EOH ONLY
JOG SHUTTLE
EXCEPT EA
SW1
S1
S2
S3
C1
S4
GND
P1
WP1
OPERATION (A) PCB
V1330B5070 (EA ONLY)
OPERATION (D) PCB
V1132B5070 (EXCEPT EA)
JOG SHUTTLE PCB
V1132C5080
VS-F300EA/EOH
VS-F310EK/EOH
VS-F320EM
CONNECTION DIAGRAM
No.13-1 V113201M



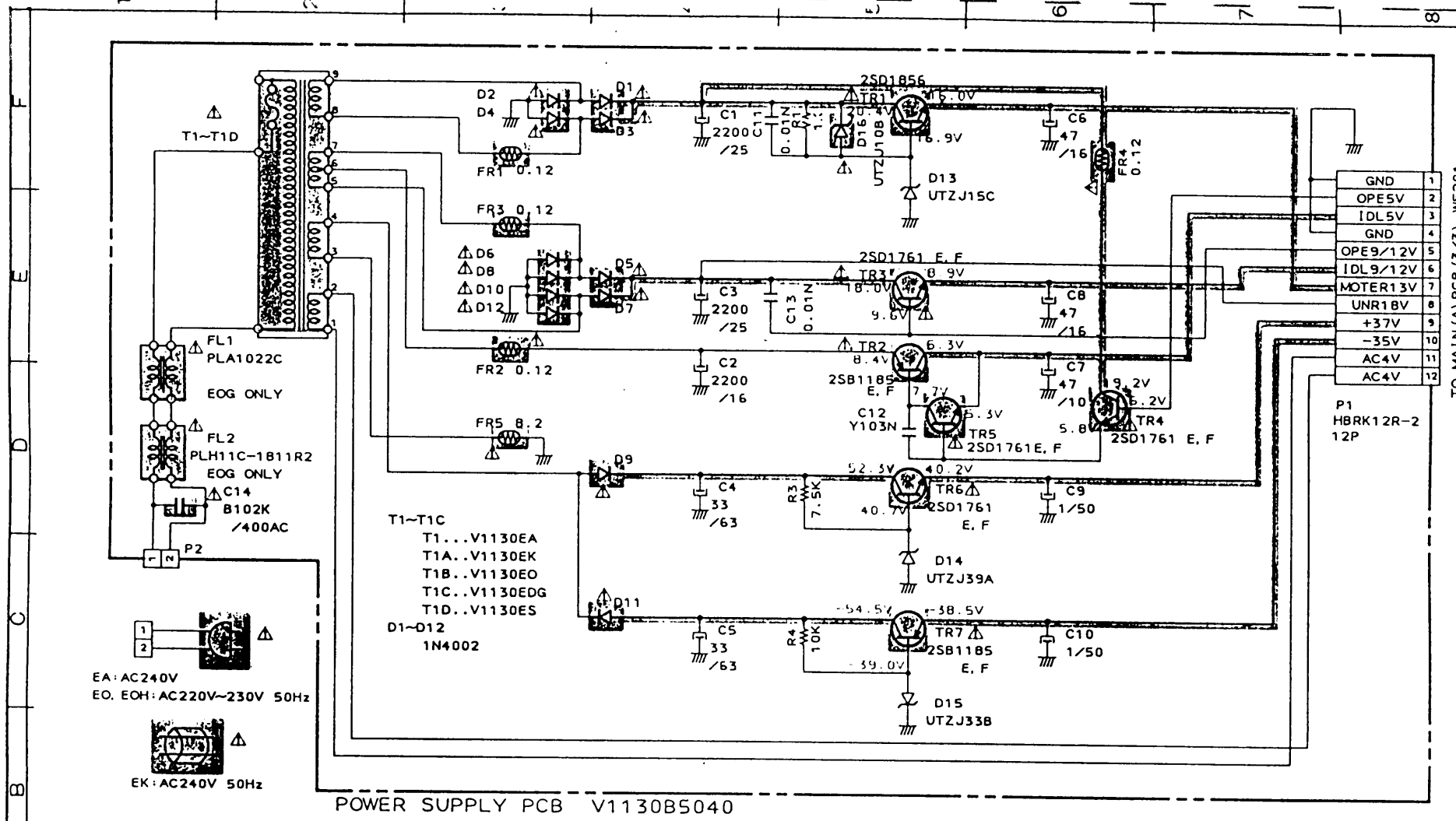
JOG SHUTTLE PCB V1132C5080



A/C HEAD PCB
V1102B5120J1



SENSOR PCB
V1102A507A



POWER SUPPLY PCB V1130B5040

WARNING: ⚠ AND ▬ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

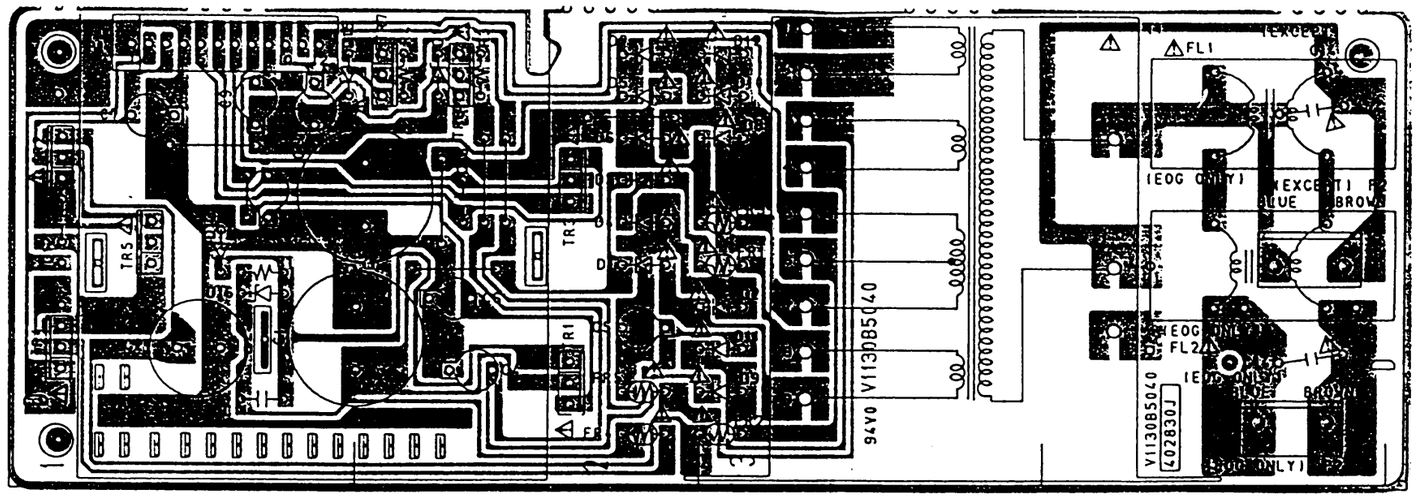
AVERTISSMENT: ⚠ ET ▬ ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

ALL R WITHOUT INDICATION ARE 1/6W.
ALL FR WITHOUT INDICATION ARE 1/4W.

INDICATED VOLTAGES ARE MEASURED IN STOP MODE.

——— : B (POWER SUPPLY) LINE

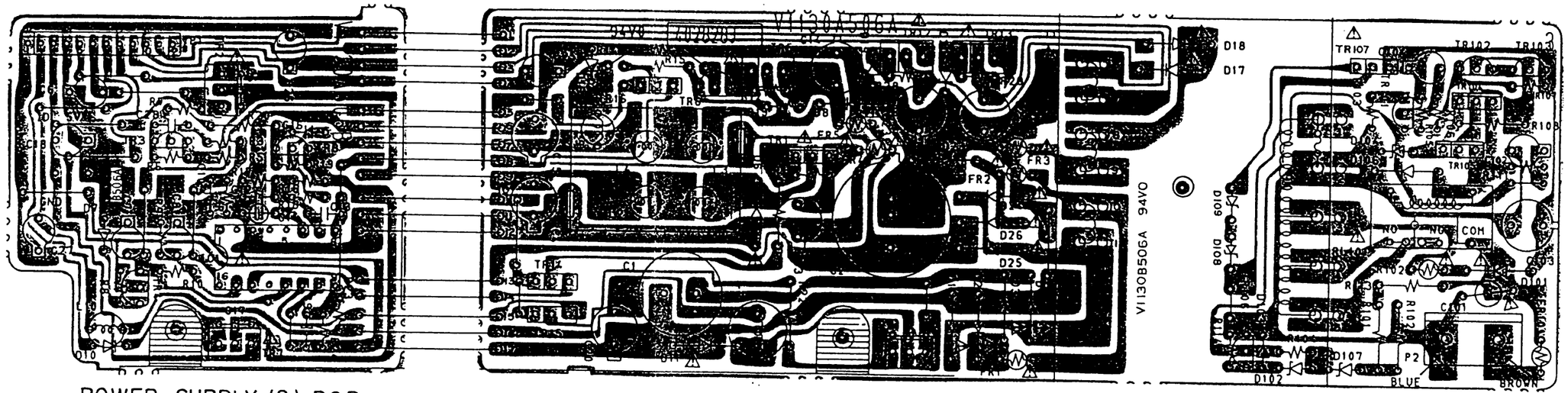
VS-F300EA/EOH
VS-F310EK/EOH
POWER SUPPLY
No.13-2 V113008M



POWER SUPPLY PCB V1130B5040

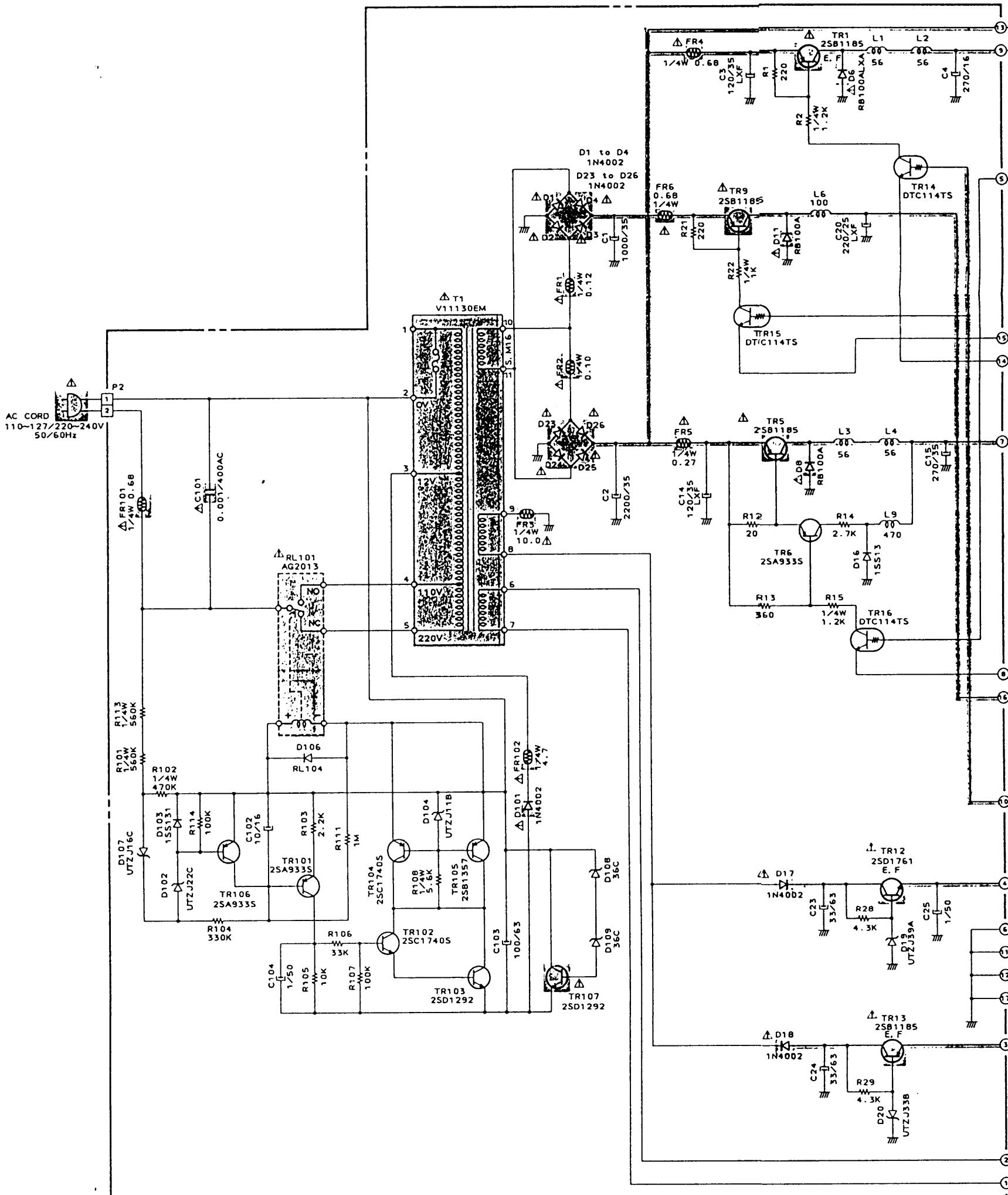
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY.
REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S
RECOMMENDED PARTS

AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ.
POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL,
NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT



POWER SUPPLY (2) PCB
V1130A506B

POWER SUPPLY (1) PCB V1130A506A

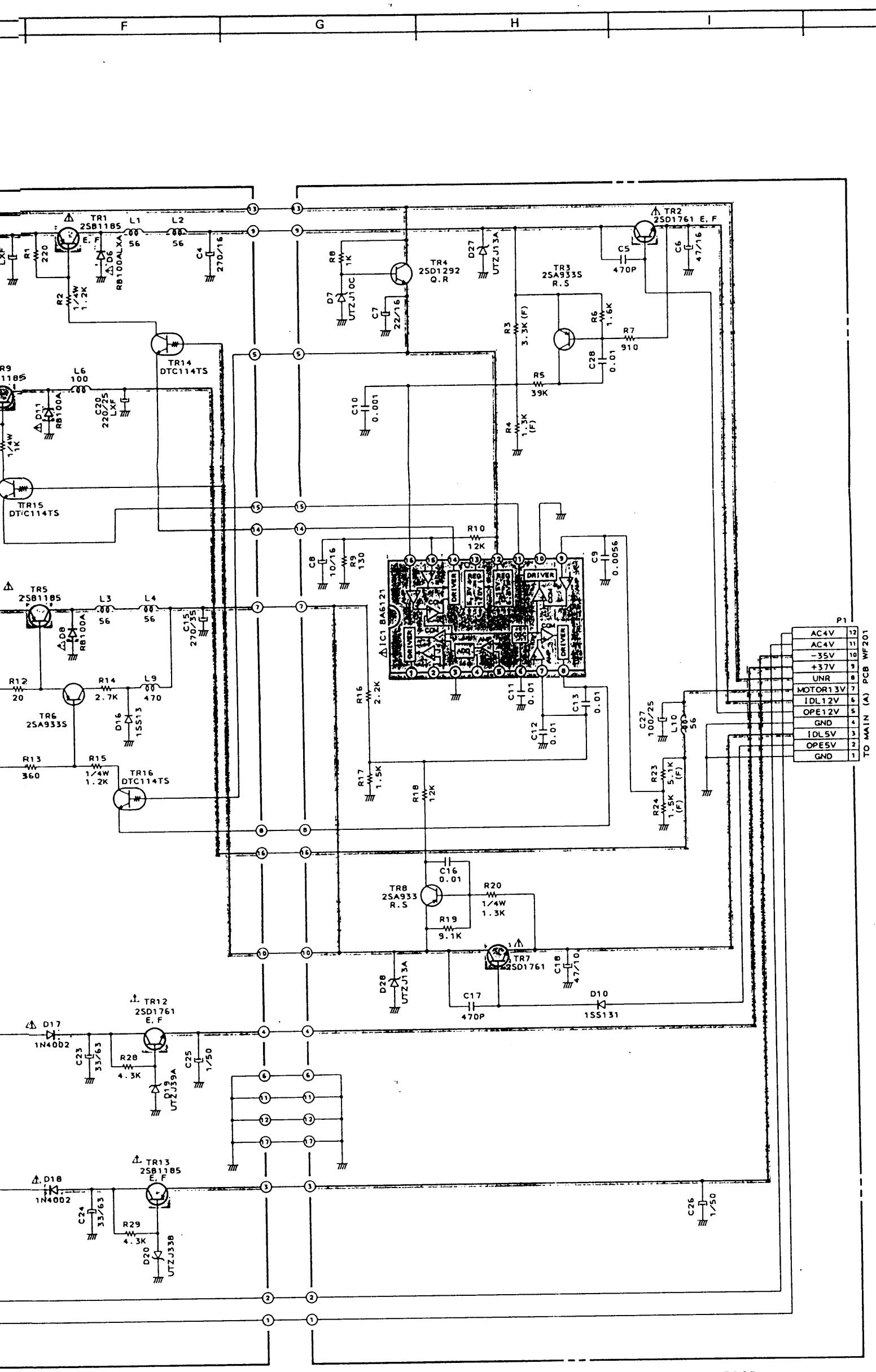


POWER SUPPLY (1) PCB V1130A506A

B (POWER SUPPLY) LINE

WARNING: ⚠ AND INDICATE
COMPONENTS FOR CONT
REPLACE SAFETY CRIT
ONLY WITH MANUFACTU
PARTS

AVERTISSMENT: ⚠ ET ILS
COMPOSTANTS CRITIQU
POUR MAINTENIR LE D
DE L' APPAREIL, NE RE
PIÈCES RECOMMANDEES



POWER SUPPLY (2) PCB V1130A506B

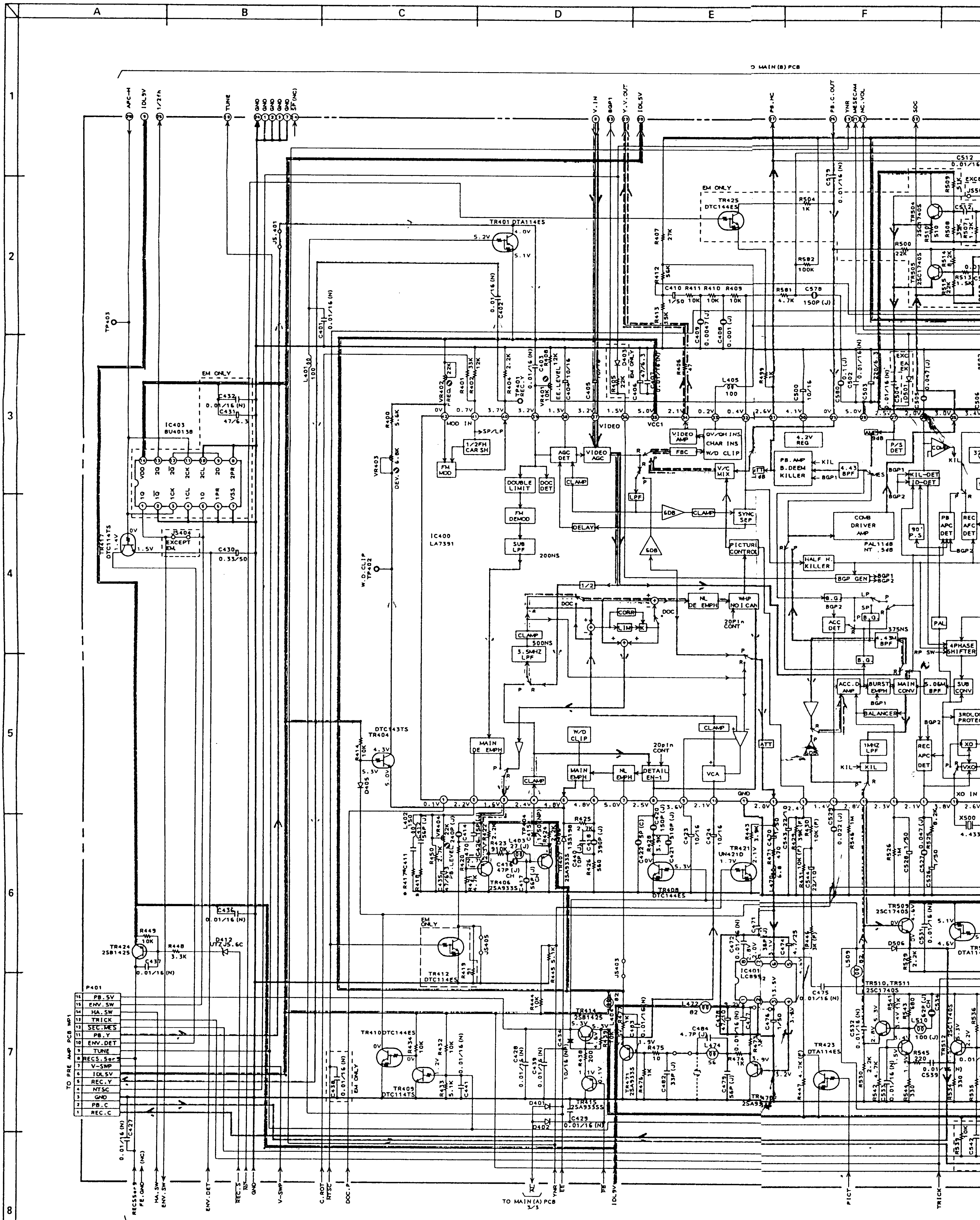
WARNING: ⚠ AND ▭ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▭ ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/6W (J)
ALL CAPACITORS IN μF 50 WV (M)
ALL INDUCTORS IN μH (K)

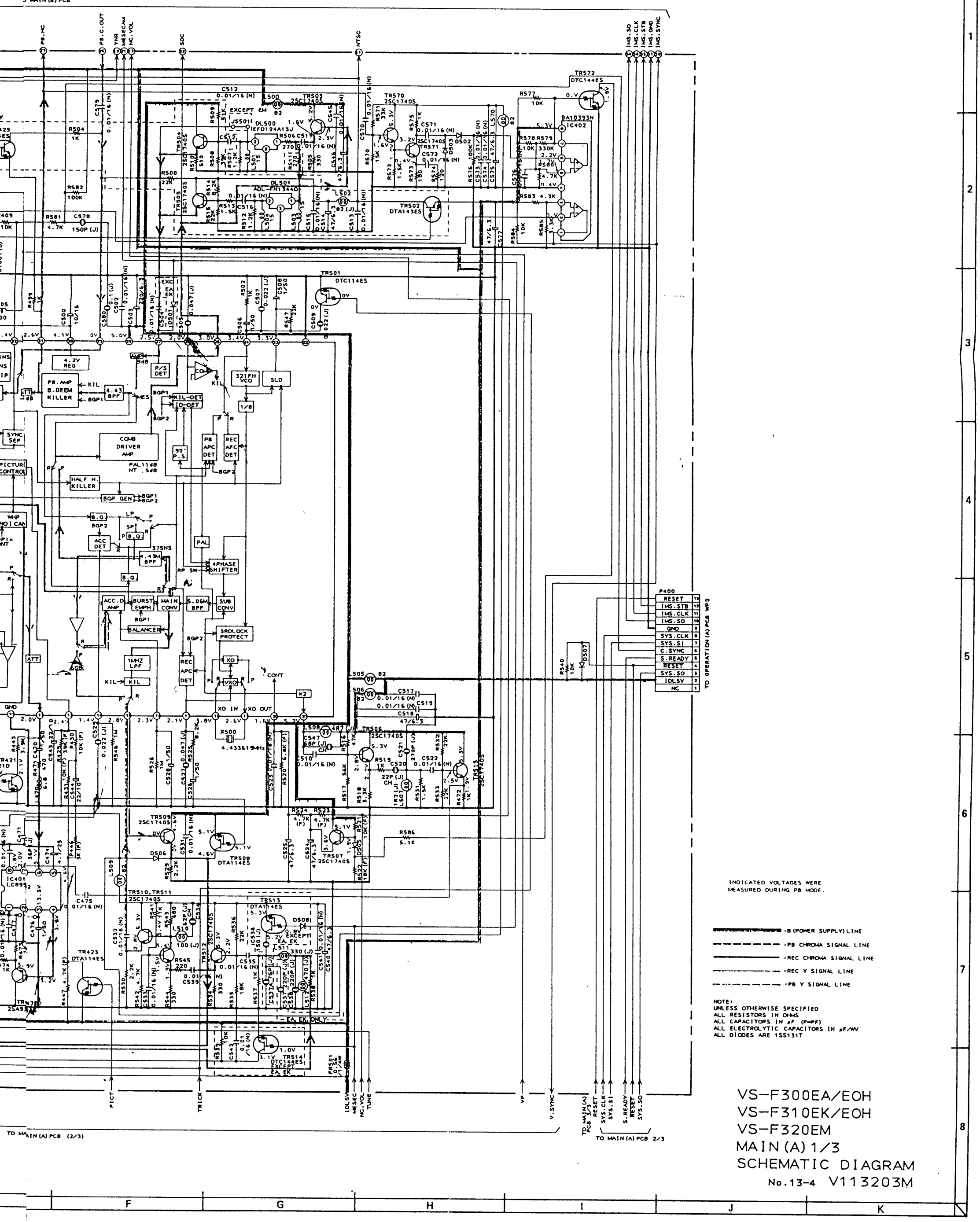
VS-F320EM
POWER SUPPLY (1), (2) SCHEMATIC DIAGRAM

No.13-3 V113003M



MAIN (A) PCB 1/3
V1130A501A

D MAIN (B) PCB



INDICATED VOLTAGES WERE MEASURED DURING PB MODE.

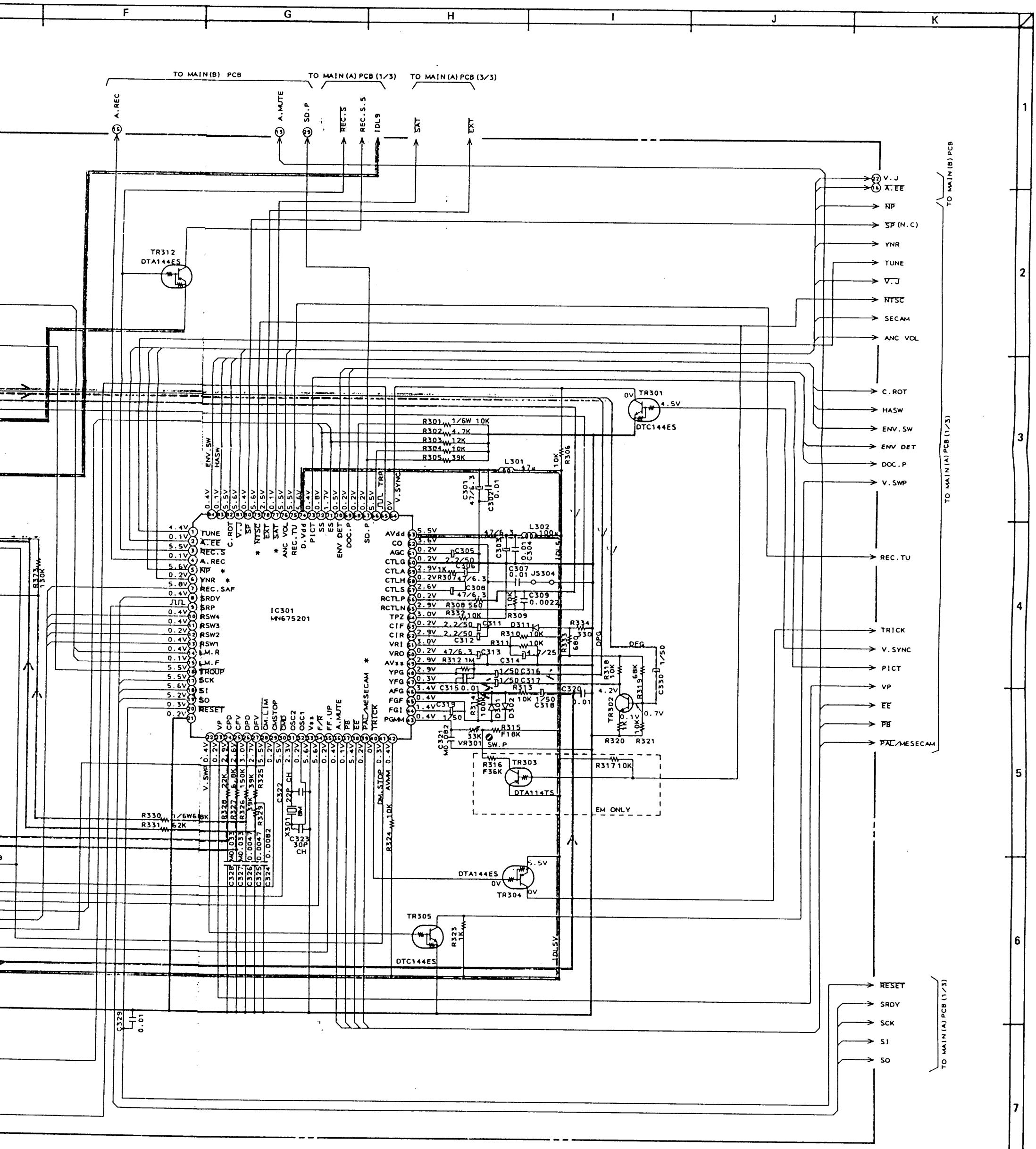
- B (POWER SUPPLY) LINE
- PB CHROMA SIGNAL LINE
- REC CHROMA SIGNAL LINE
- REC Y SIGNAL LINE
- PB Y SIGNAL LINE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL DIODES ARE 1SS131T

VS-F300EA/EOH
VS-F310EK/EOH
VS-F320EM
MAIN (A) 1/3
SCHEMATIC DIAGRAM

No. 13-4 V113203M

MAIN (A) PCB (2/3) V1130A501A



NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL DIODES ARE 1SS131T

WARNING: ⚠ AND [redacted] INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET [redacted], ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

VS-F300EA/EOH
VS-F310EK/EOH
VS-F320EM
MAIN (A) 2/3
SCHEMATIC DIAGRAM

No.13-5 V113204M

MD1
RF OUT
ANT IN
ANT.OUT
BOOSTER
BOOSTER
MODULAT
FM MODU-LATION
CLAMP
EA.EM ONLY
PJ101 T6353.4P
A.IN(R)
V.IN
A.OUT
V.OUT
JS101
R124 75
R135 2.2
R137 330
C124 100P
EA.EM ONLY
R126 330
TU1
ANT.IN
FILTER
RF AMP
MIX AMP
IF AMP
OSC
(1) ANT.IN
(3) UHF
(4) TU.V
(5) VH
(2) AGC
(6) VL
(7) AFT OR HYP
(8) +B
(9) IF
*L1 EA:1.0 EK.EM:0.68
*L1
C1710P
*D10
*D9
EO.EOG-V ONLY
IF1
9 V.AGC
8 U.AGC
7 A.OUT
6 Vcc
5 IF
4 GND
3 V.OUT
2 RF AGC
1 AFT
IF AGC
B.NOISE INV.
RF AGC
VIDEO DET
AMP
SAW FIL.
VIF AMP
VIF AMP
LIM
AFT
VOLUME
ATT.
LIM
RF AMP
FM DET
BUFFER
VIDEO EQ
fs TRAP
+37V
TR2 2SC2926S
PWM
R3 4.7K
R4 4.7K
R7 22K
R8 10K (F)
R9 10K
R10 10K
R11 22K
C4 0.1 (M)
C5 0.1 (M)
C6 0.1 (M)
C7 0.082 (M)
TR3
R5 75
IC1 L5631
C3 10/50
R6 33K
D2
D1
32.3V
38.1V
37.5V
*C10 EA:2.2/50 EXCEPT:1/50
C16 0.01
R21 22K
EXCEPT EK
JS1
EK ONLY
C9 0.01
C8 100/16
*R28 EO.EOG-V:910 EA.EK.EM:560
EXCEPT EK
EXCEPT EOH
TR13 2SA1317
R26 150K
R27 470
*R28
D6
R33 820K
UTZJ8.2C
D7
R32 910K
C11 0.001
EOH ONLY
TR4
TR5
TR6
TR7
R12 10K
R13 10K
R14 10K
R15 10K
R16 10K
R17 10K
R18 2.2K
R19 2.2K
R20 4.7K
D3
D4
D5
DTC144ES
DTC144ES
DTC144ES
EOH ONLY
TR8
TR9
TR10
BAND.A
TR14
TR16
R29 330K
R30 270K
R31 10K
R25 10K
TR12
TR11
R24 22K
R22 390K
R23 330K
C12 0.0068 (M)
EOH ONLY
TR15 DTC114ES
5.1V
BAND.B
BAND.C
AFT
AFT-E
C201 100P
IC201 NJM4558L (2/2)
IC201 NJM4558L (1/2)
R208 1K
R206 10
R202 10
R209 1K
R203 3.3K
R204 3K (F)
R220 1K
R205
C205 100P
C204 47/16
R207 100K
C203 10/16
D204 UTZJ5.1C
D203
D206
EOG-V ONLY
D207
EOG-V ONLY
*R205 EO.EOH.EOG-V:2.4K (F) EA.EK.EM:4.3K (F)
TR17
TR18
R34 5.6K
R35 2.2K
R36 2.2K
R37 1.2K
D8 UTZJ5.6A
FR201 120 1/4W
TR210 2SD1292
TR201 2SD1292
21.3V
5.7V
R201 220
D202
D201
D211 UTZJ6.2A
R223 3.3K
EOG-V ONLY
C202 47/6.3
C206 10/50
R222 470
EOG-V ONLY
R211 470
R212 100K
R213 270
0.6V
D210 UTZJ30B
R210 9.1K
D205 MTZJ3.3B
R214 0.75 1W FUNEN
D208
D209
C207 10/25
R215
EOG-V ONLY
TR211
DTA114ES
C210 0.01
R224 10K
TR209
DTC144ES
EXCEPT EA.EM
EA.EM ONLY
JS4
JS5
TR19
DTC144ES
MD
EXCEPT EOH
JS201
WF201
GND
OPE5V
IDL5V
GND
OPE12/9V
IDL12/9V
MOTER13V
UNR16V
+37V
-35V
AC4V
AC4V
TO POWER SUPPLY PCB P9
AC4V
AC4V
-35V
MOTER13V
D213 1N4002
D212 1N4002
DM POWER
C208 47/16
BUP 5V
P.DOWN
R123 12K
D101 UTZJ12C
JS107
12.1V
TR108
12.0V
DTA114ES
EK.EO.EOH.EOG-V ON
PWM
BAND.A
BAND.B
BAND.C
AFT
AFT-L
AFT-R
RESET
AC
TV/VCR
TO MAIN (A) PCB (2/3)
TO MAIN (A) PCB (2/3)

TU1		
	EA	TERS1-002A
	EK, EK-V	TERB1-008A
	EM	VTSB6CZ
	EOH	ENV-57883F1
	EO, EOG, EOG-V	TERE1-007B

MD1		
	YAA21-0453	EA
	YAA21-0454	EM
	ENC87975	EO, , EOG-V, EOH
	ENC87976	EK, EK-V, 611, 810V

IF1		
	KX EA	EA
	KX EK	EK, EK-V
	KX EM	EM
	KX EOH	EOH, 611N
	KX EOG	EO, , EOG-V

WARNING: ⚠ AND ▩ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSMENT: ⚠ ET ▩, ILS INDIQUENT LES COMPOSTANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT

: B (POWER SUPPLY) LINE
: VODEO IN (REC, E-E) SIGNAL LINE
: VIDEO OUT (PB, E-E) SIGNAL LINE
: AUDIO PB SIGNAL LINE
: AUDIO REC SIGNAL LINE

MAIN (A) PCB (3/3) V1130A501A

INDICATED VOLTAGES WERE MEASURED DURING PB MODE.

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL DIODES ARE 1SS131T

VS-F300EA/EOH
VS-F310EK/EOH
VS-F320EM
MAIN (A) 3/3
SCHEMATIC DIAGRAM

No.13-6 V113205M

PRINCIPAL PARTS LOCATION

ICS

IC101	D5
IC201	F4,5
IC301	E1,2
IC302	F1,2
IC303	E,F3
IC304	F2
IC400	C3
IC401	C,D4
IC402	C,D1
IC403	B,C5

WF

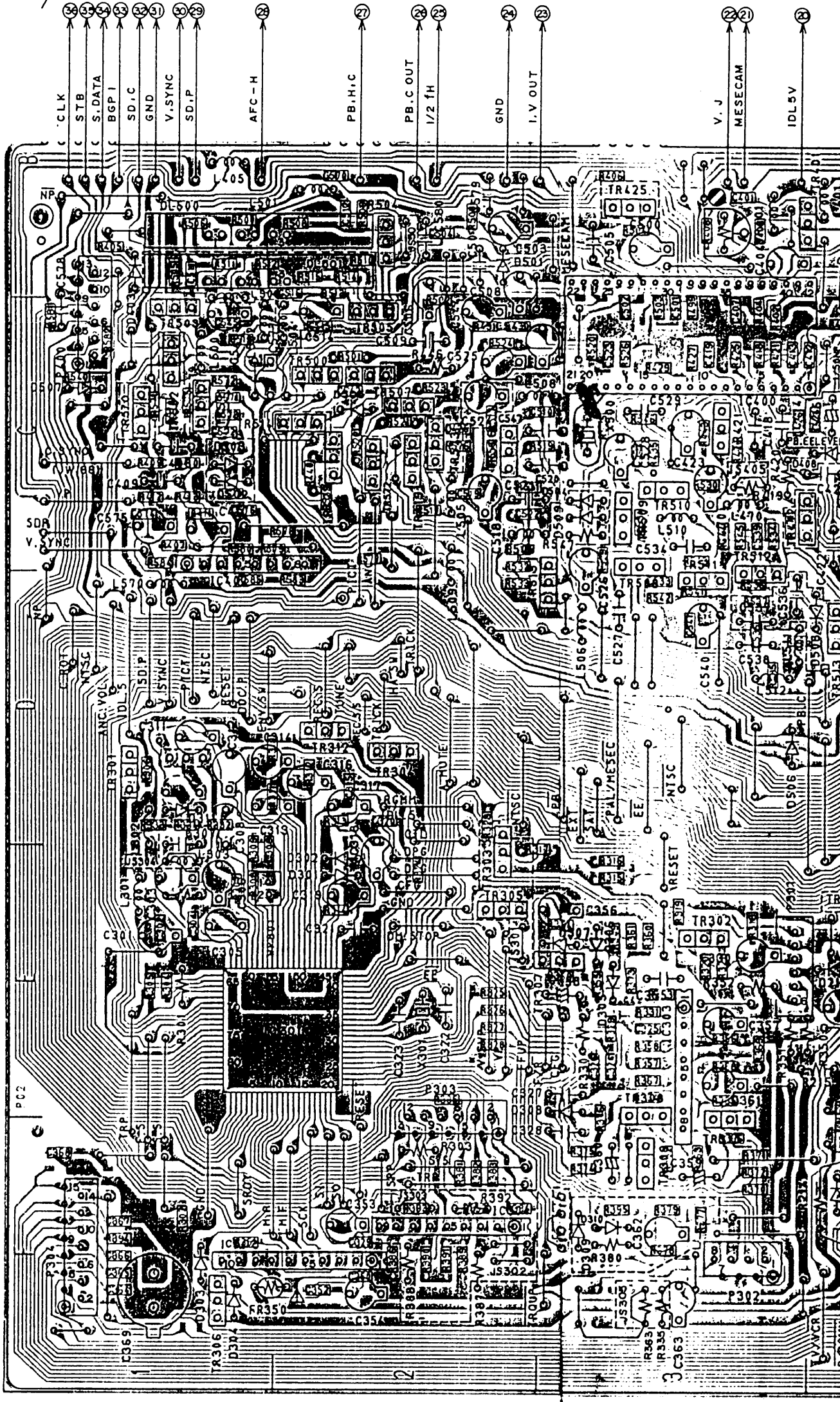
WF201	F4,5

CONNECTORS

P1	E,F5
P301	E3
P302	E3
P303	E2
P304	F1
P400	B,C1
P401	D5

TRANSISTORS

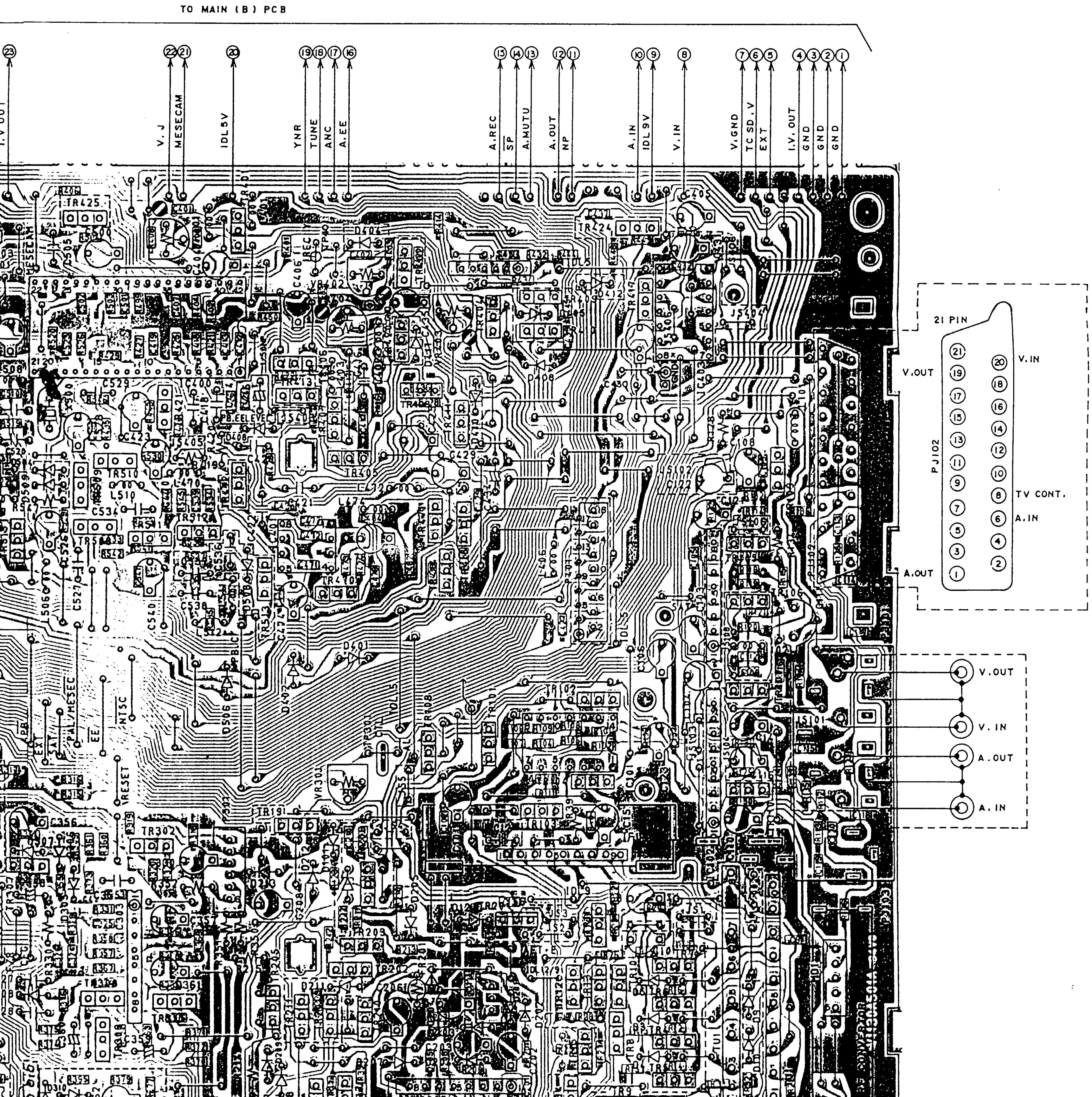
TR1	F6
TR2	F6
TR3	F5
TR4	F5
TR5	F5
TR6	F5
TR7	E5
TR8	F5
TR9	F5
TR10	E,F5
TR11	E5
TR12	E5
TR13	E,F5
TR14	F5
TR15	F5
TR16	F5
TR17	F4
TR18	F4
TR19	E4
TR20	E5
TR101	D5
TR102	D5
TR103	E5
TR104	E5
TR105	D6
TR107	D6
TR108	D4
TR109	C6
TR201	F4
TR202	E4
TR203	E4
TR205	E,F4
TR210	E,F4
TR301	D1
TR302	E3
TR303	D,E2
TR304	D2
TR305	E2
TR306	F1
TR307	E3
TR308	E,F4
TR309	F3
TR310	E,F3
TR401	B3
TR404	C5
TR406	C4
TR407	C4
TR408	C4
TR409	C5
TR410	C5
TR414	D4
TR415	C4
TR417	C5
TR421	C3
TR423	C2
TR425	B3
TR470	D4
TR471	C4
TR501	C2
TR502	C1
TR503	C1
TR504	C1
TR505	C2
TR506	C2
TR507	C2
TR508	C,D3
TR509	C3
TR510	C3
TR511	D3
TR512	C,D3
TR513	D4
TR514	C2
TR515	C2
TR570	C1
TR571	C1
TR572	C2



MAIN (A) PCB

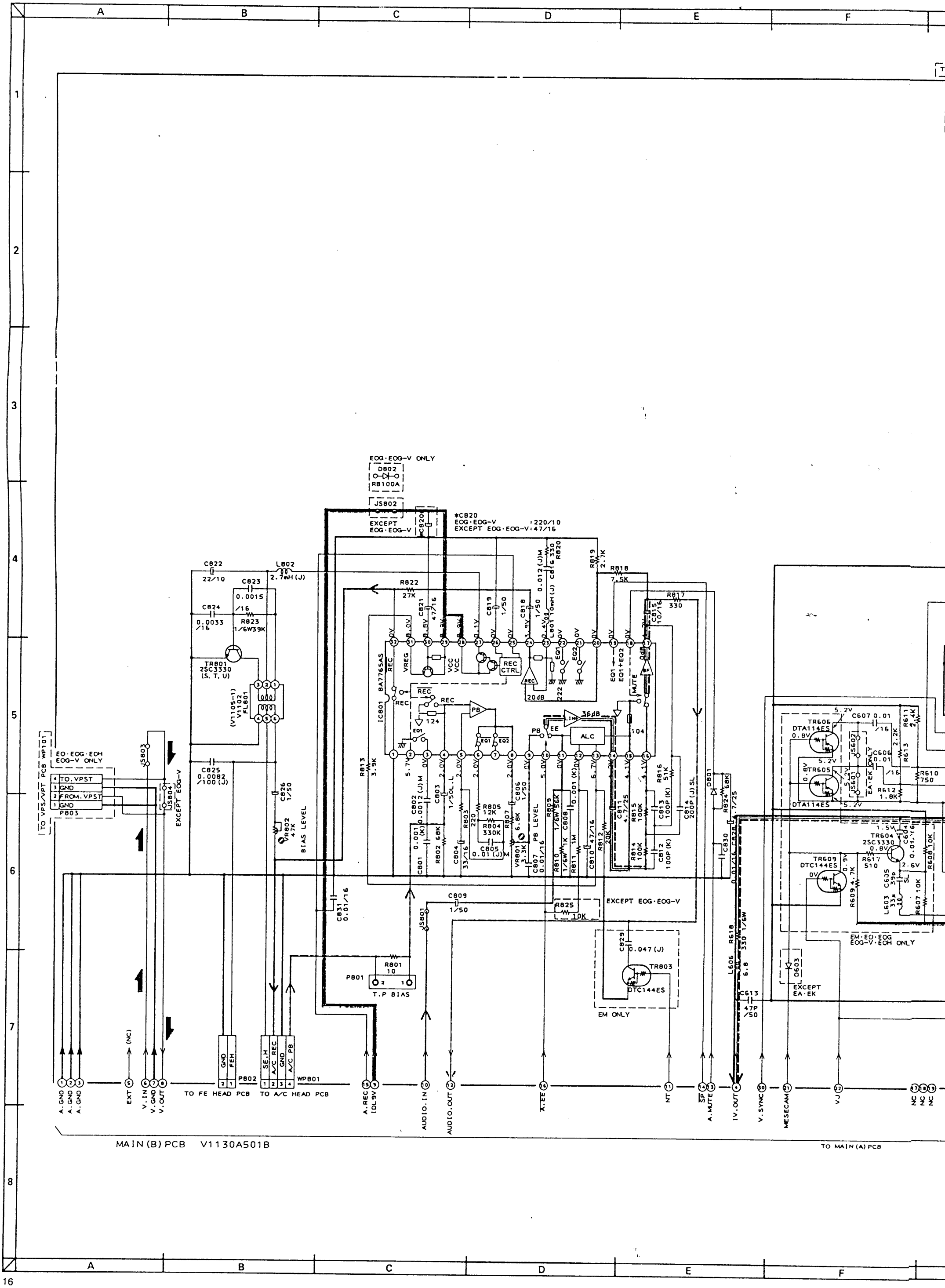
WARNING: ⚠ INDICATES SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

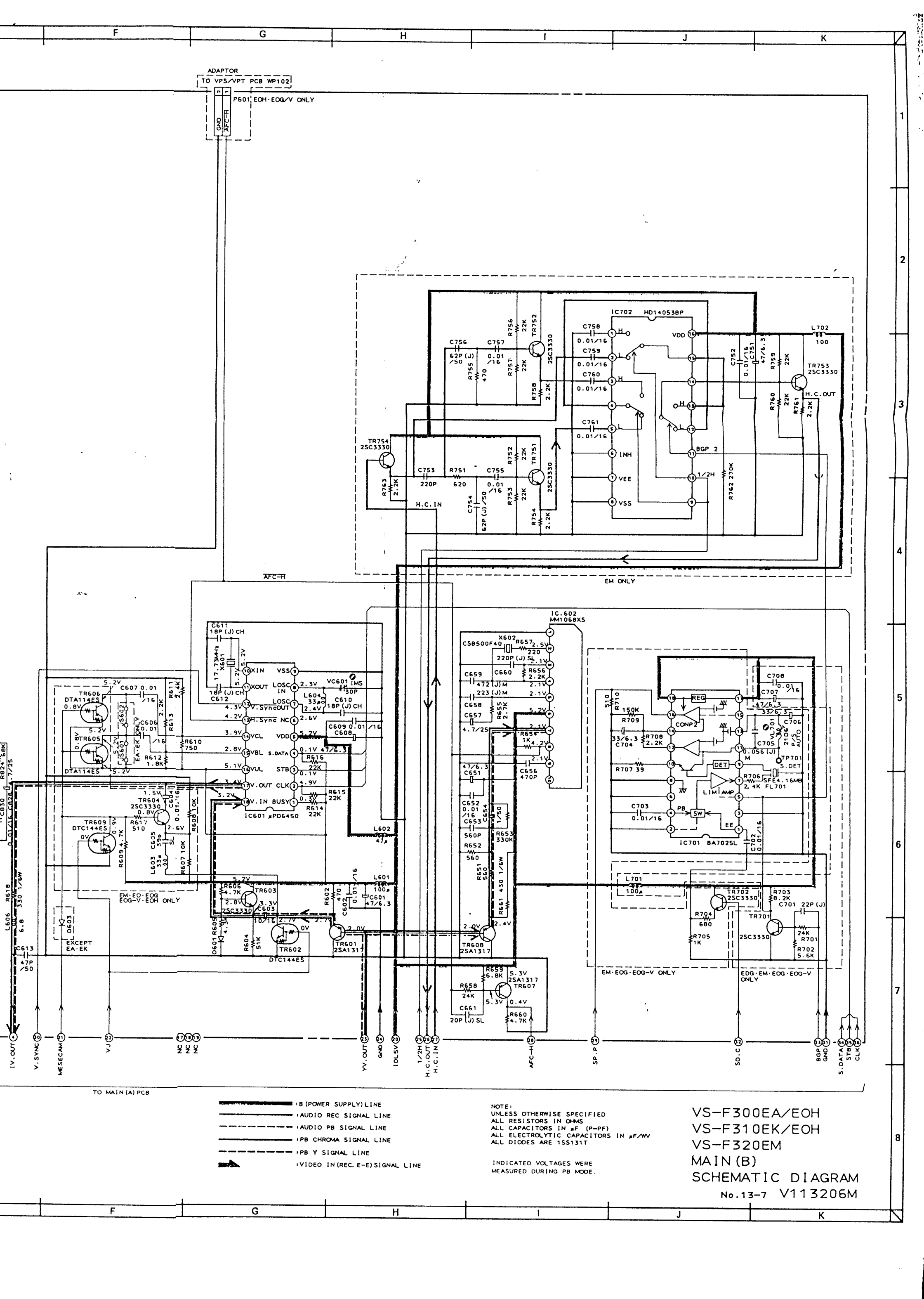
AVERTISSEMENT: ⚠ IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDEES PAR LE FABRICANT



MAIN (A) PCB VI130A501AJ1

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PARTAINING PARTS INFORMATION.


EOG·EOG-V ONLY
D802
RB100A
JS802
EXCEPT EOG·EOG-V
*C820
EOG·EOG-V :220/10
EXCEPT EOG·EOG-V :47/16
C822 22/10
L802 2.7mH(J)
C823 0.0015
C824 0.0033 /16
R823 1/6W39K
TR801 2SC3330 (S, T, U)
(V1105-1) V1102 FL801
C825 0.0082 /100(J)
R802 4.7K
BIAS LEVEL
C826 1/50
C831 0.01/16
R822 27K
C821 47/16
C819 1/50
C818 1/50
0.012(J)M
L801 10mH(J)
C816 330
R820
R819 2.7K
R818 7.5K
R817 330
C815 10/16
IC801 BA7765AS
REC
VREG
VCC
REC CTRL
20dB
EQ1
EQ2
EQ1+EQ2
MUTE
PB
EE
ALC
LIN
36dB
R813 3.9K
C802 0.0012(J)M
C803 1/50
C804 33/16
C805 0.01(J)M
R805 12K
R804 330K
R803 220
R807 6.8K
C806 1/50
PB LEVEL
VR801 3.3K
C807 0.01/16
R809 1/6W56K
C808 0.001(K)
R810 1/6W1K
R811 1M
C810 47/16
R812 20K
C811 4.7/25
R814 100K
R815 100K
C813 100P(K)
R816 51K
C812 100P(K)
C814 200P(J)SL
D801
R824 68K
C830 0.01/16
R828 7/25
R618 330 1/6W
C609 1/50
R825 10K
EXCEPT EOG·EOG-V
C829 0.047(J)
TR803
DTC144ES
EM ONLY
R801 10
P801
T.P BIAS
JS801
JS803
JS804
EXCEPT EOG-V
EO·EOG·EOH
EOG-V ONLY
TO VPS/VPT PCB WP101
P803
TO VPS
GND
FROM VPST
GND
P802
GND
FEH
TO FE HEAD PCB
WP801
SE.H
A/C REC
GND
A/C PB
TO A/C HEAD PCB
A.GND
A.GND
A.GND
EXT
(NC)
V.IN
V.GND
V.OUT
A.REC
10L9V
AUDIO.IN
AUDIO.OUT
A.EE
NT
SP
A.MUTE
IV.OUT
V.SYNC
MESECAM
VJ
NC
NC
NC
TR606 DTA114ES
C607 0.01 /16
R611 2.4K
R613 2.2K
C606 0.01 /16
EA·EK ONLY
TR605 DTA114ES
R610 750
R612 1.8K
TR604 2SC3330
C604 0.01/16
R617 510
TR609 DTC144ES
R609 4.7K
R608 10K
R607 10K
C635 39p SL
L603 33μ
D603
EXCEPT EA·EK
C613 47P /50
L606 6.8
EM·EO·EOG
EOG-V·EOH ONLY
MAIN(B) PCB V1130A501B
TO MAIN(A) PCB



: B (POWER SUPPLY) LINE
: AUDIO REC SIGNAL LINE
: AUDIO PB SIGNAL LINE
: PB CHROMA SIGNAL LINE
: PB Y SIGNAL LINE
: VIDEO IN (REC. E-E) SIGNAL LINE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL DIODES ARE 1SS131T

INDICATED VOLTAGES WERE MEASURED DURING PB MODE.

VS-F300EA/EOH
VS-F310EK/EOH
VS-F320EM
MAIN (B)
SCHEMATIC DIAGRAM

No.13-7 V113206M

PRINCIPAL PARTS LOCATION

ICS

IC601 ..... A3
IC602 ..... A1
IC701 ..... A1
IC702 ..... A2
IC801 ..... A4

WP

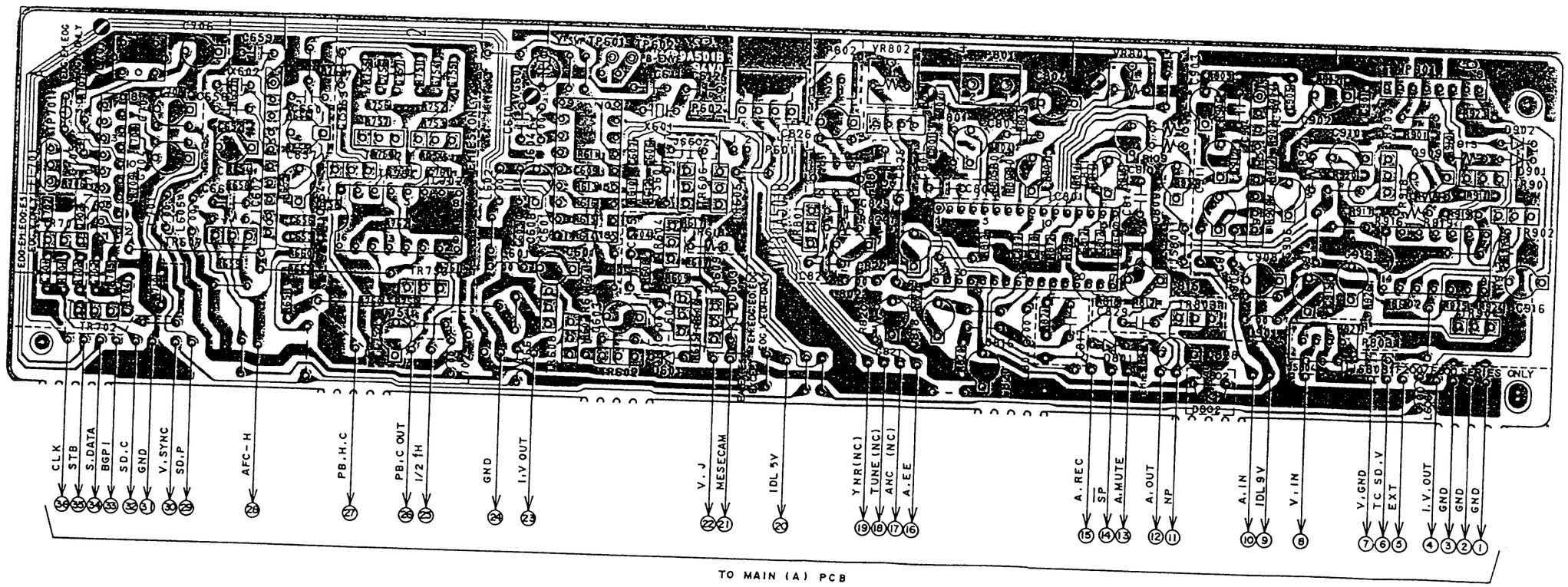
WP801 ..... A4

CONNECTORS

P601..... A3
P602..... A3
P801..... A4
P802..... A4
P803..... A5,6

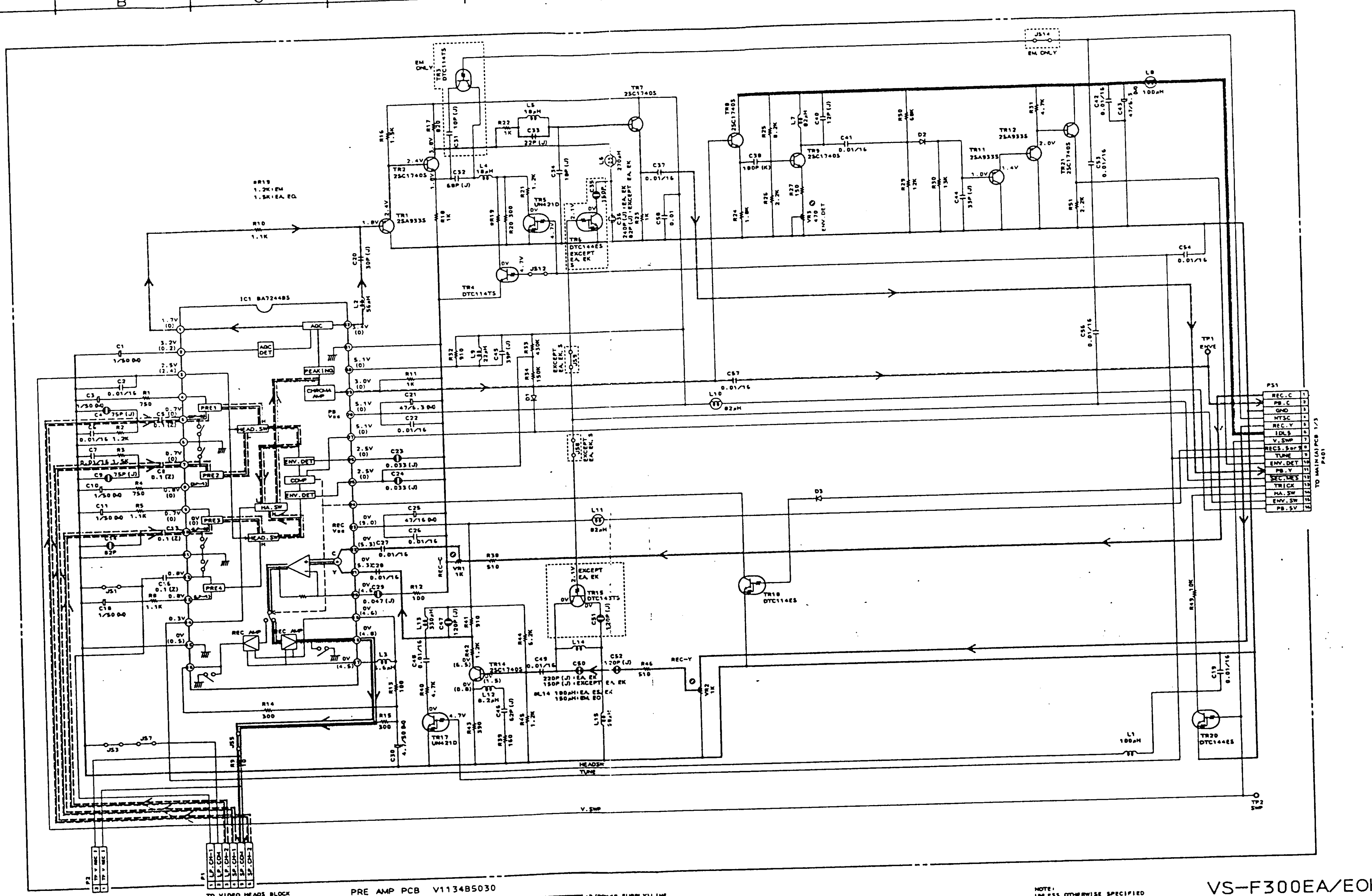
TRANSISTORS

TR601 ..... A3
TR602 ..... A3
TR603 ..... A3
TR604 ..... A3
TR605 ..... A3
TR606 ..... A3
TR607 ..... A1
TR608 ..... A3
TR609 ..... A3
TR701 ..... A1
TR702 ..... A1
TR751 ..... A2
TR752 ..... A2
TR753 ..... A2
TR754 ..... A2
TR801 ..... A4
TR803 ..... A5



MAIN (B) PCB V1130A501BJ1

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PARTAINING PARTS INFORMATION.



PRE AMP PCB V113485030

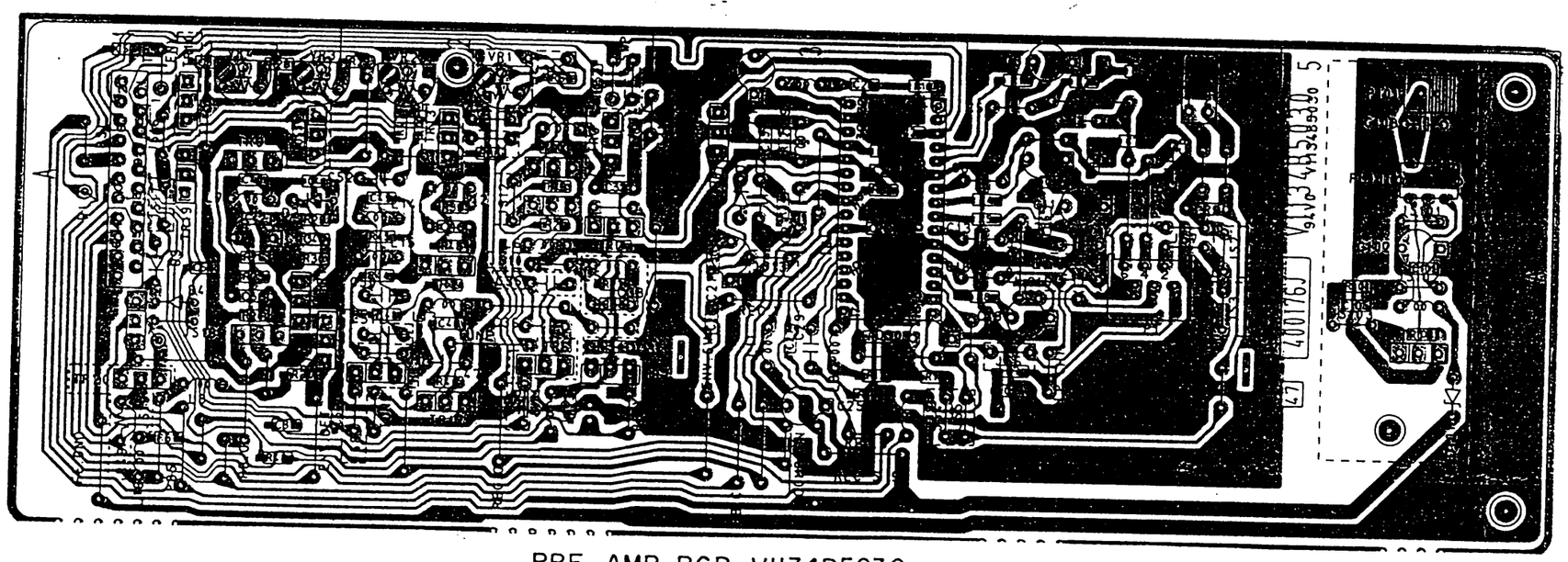
- :B (POWER SUPPLY) LINE
- :REC CHROMA SIGNAL LINE
- :PB CHROMA SIGNAL LINE
- :REC Y SIGNAL LINE
- :PB Y SIGNAL LINE

INDICATED VOLTAGES WERE MEASURED DURING PB MODE.
( ) : REC MODE

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN µF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN µF/WV
ALL DIODES ARE 1SS131

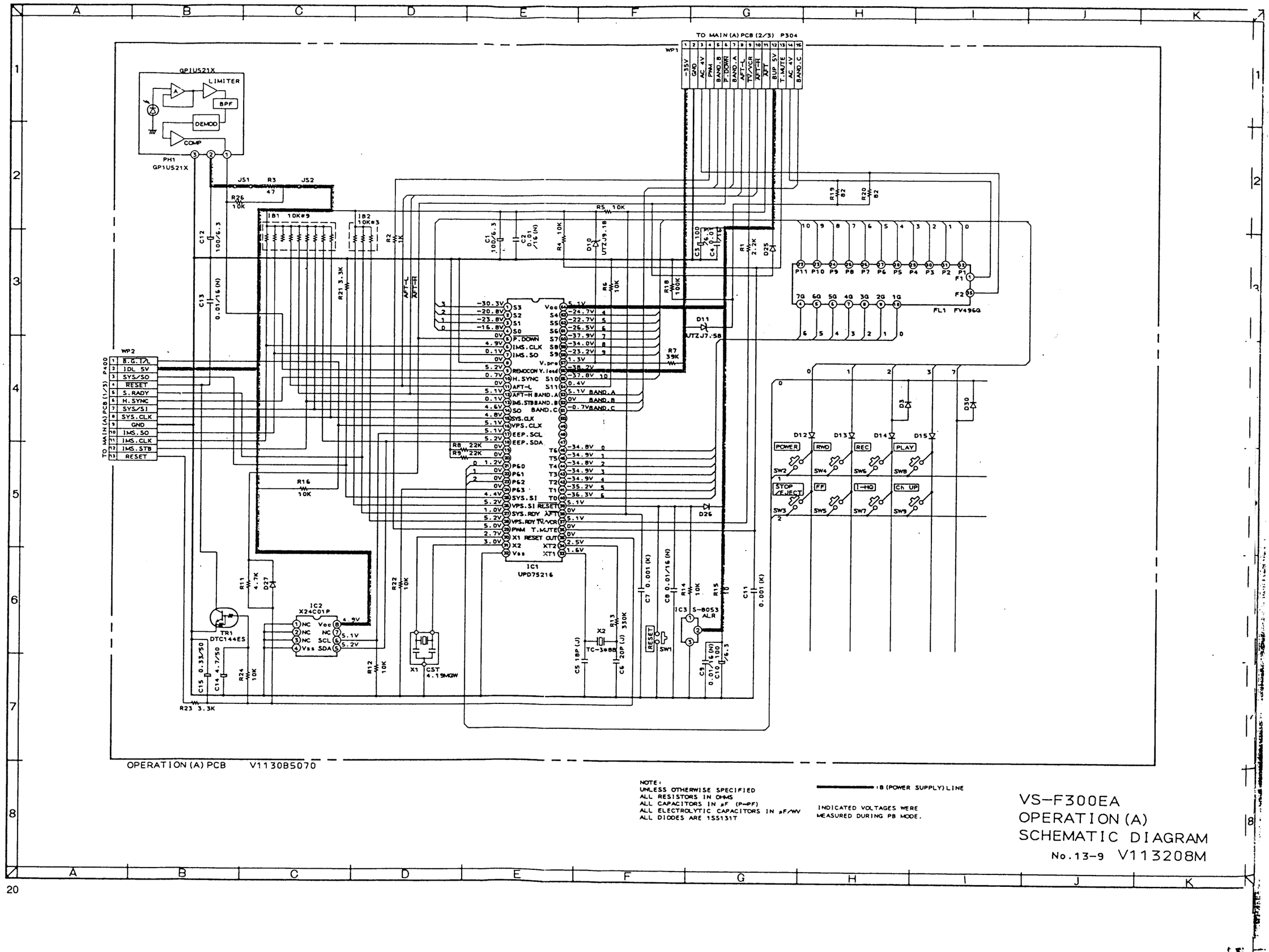
VS-F300EA/EOH
VS-F310EK/EOH
VS-F320EM
PRE AMP PCB SCHEMATIC DIAGRAM

No.13-8 V113207M



PRE AMP PCB VII34B5030

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER.
REFER TO SCHEMATIC DIAGRAMS FOR PARTAINING
PARTS INFORMATION.



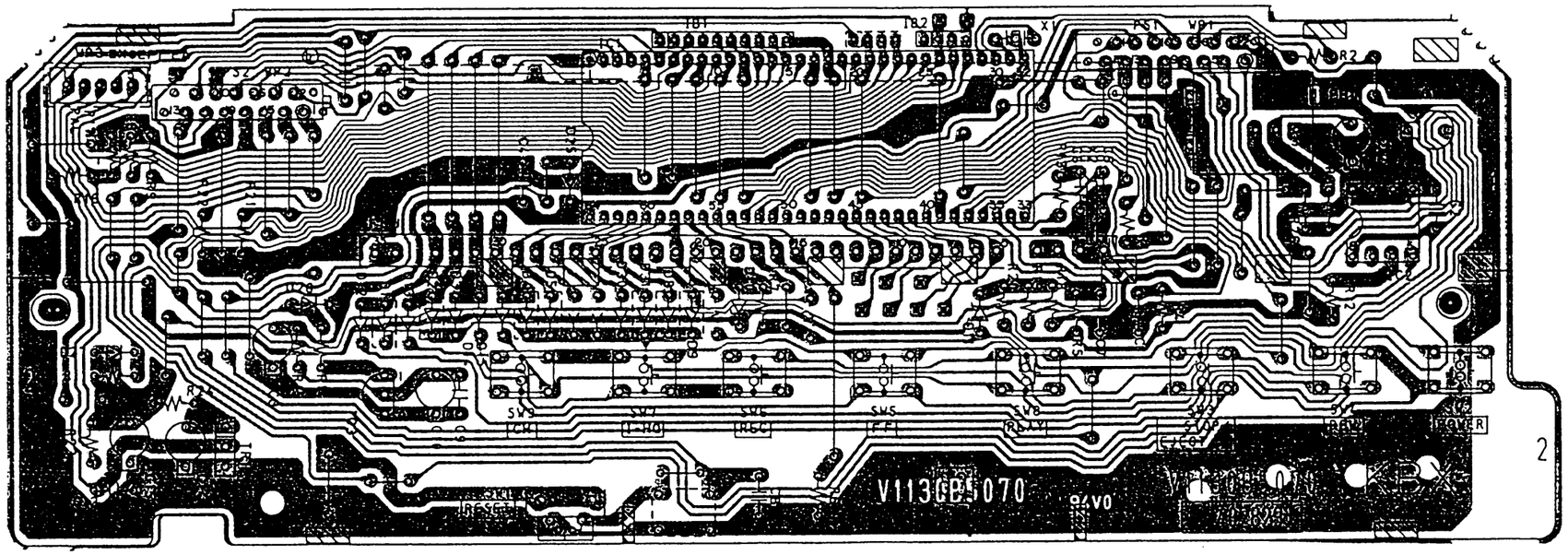
OPERATION (A) PCB V1130B5070

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL DIODES ARE 1SS131T

1B (POWER SUPPLY) LINE

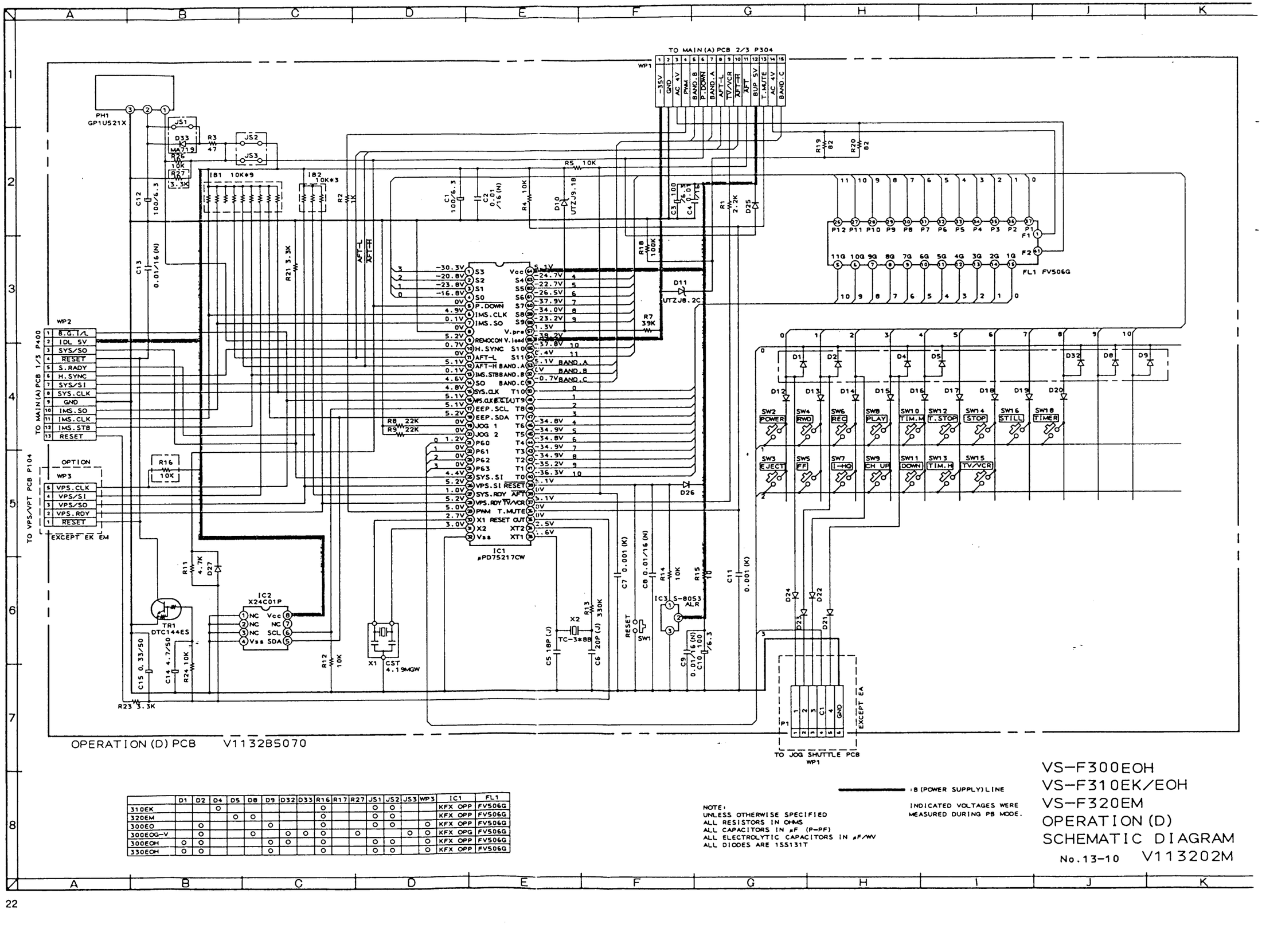
INDICATED VOLTAGES WERE MEASURED DURING PB MODE.

VS-F300EA
OPERATION (A)
SCHEMATIC DIAGRAM
No.13-9 V113208M



OPERATION (A) PCB V1130B5070

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PARTAINING PARTS INFORMATION.



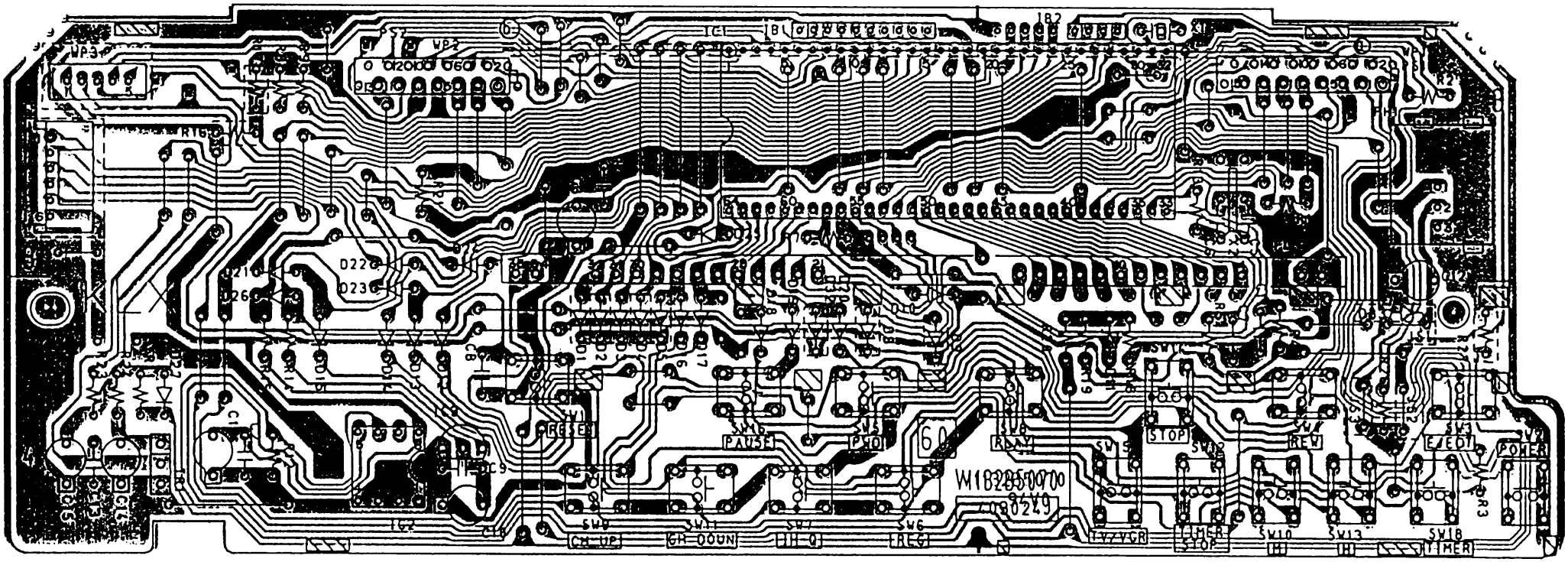
	D1	D2	D4	D5	D8	D9	D32	D33	R16	R17	R27	JS1	JS2	JS3	WP3	IC1	FL1
310EK			○						○			○	○			KFX OPP	FV506G
320EM				○	○				○			○	○			KFX OPP	FV506G
300EO		○				○			○			○	○		○	KFX OPP	FV506G
300EOG-V		○			○		○	○	○		○			○	○	KFX OPG	FV506G
300EOH	○	○				○	○		○			○	○		○	KFX OPP	FV506G
330EOH	○	○				○			○			○	○		○	KFX OPP	FV506G

NOTE:
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS
ALL CAPACITORS IN μF (P=PF)
ALL ELECTROLYTIC CAPACITORS IN μF/WV
ALL DIODES ARE 1SS131T

IB (POWER SUPPLY) LINE

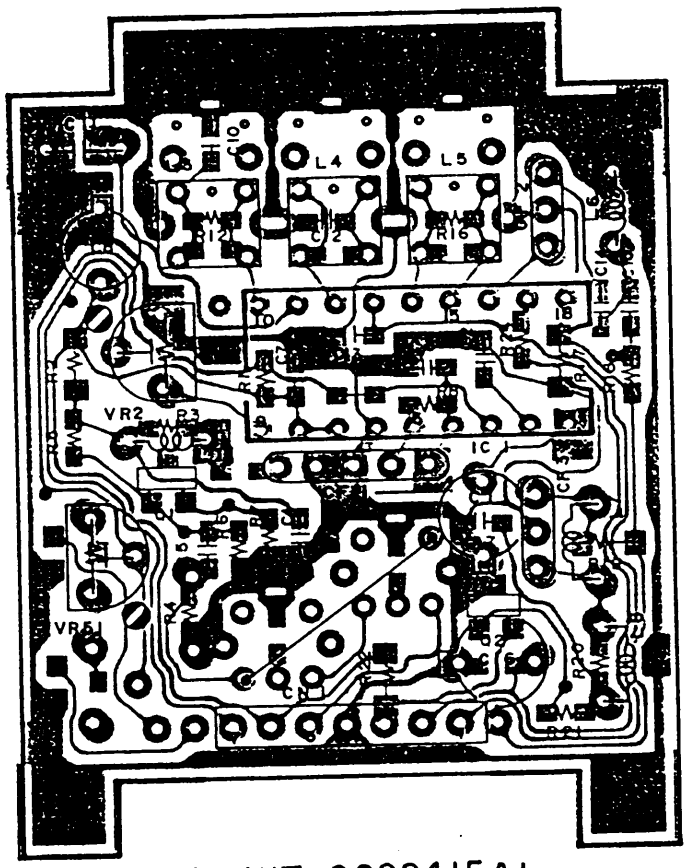
INDICATED VOLTAGES WERE MEASURED DURING PB MODE.

VS-F300EOH
VS-F310EK/EOH
VS-F320EM
OPERATION (D)
SCHEMATIC DIAGRAM
No.13-10 V113202M

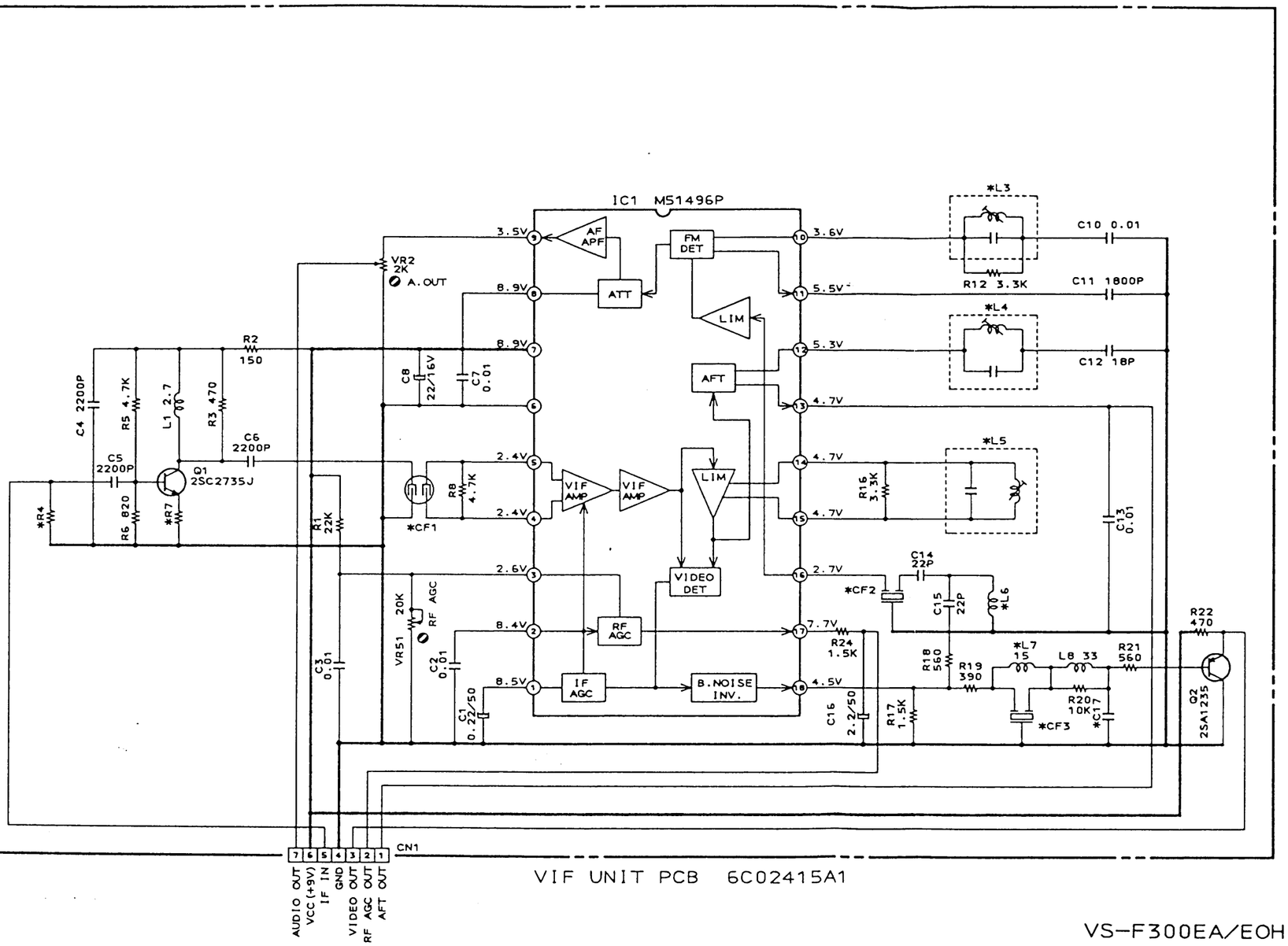


OPERATION (D) PCB V1132B5070

NOTE : PARTS DIFFER DEPENDING ON MODEL NUMBER. REFER TO SCHEMATIC DIAGRAMS FOR PARTAINING PARTS INFORMATION.



VIF UNIT 6C02415A1



VIF UNIT PCB 6C02415A1

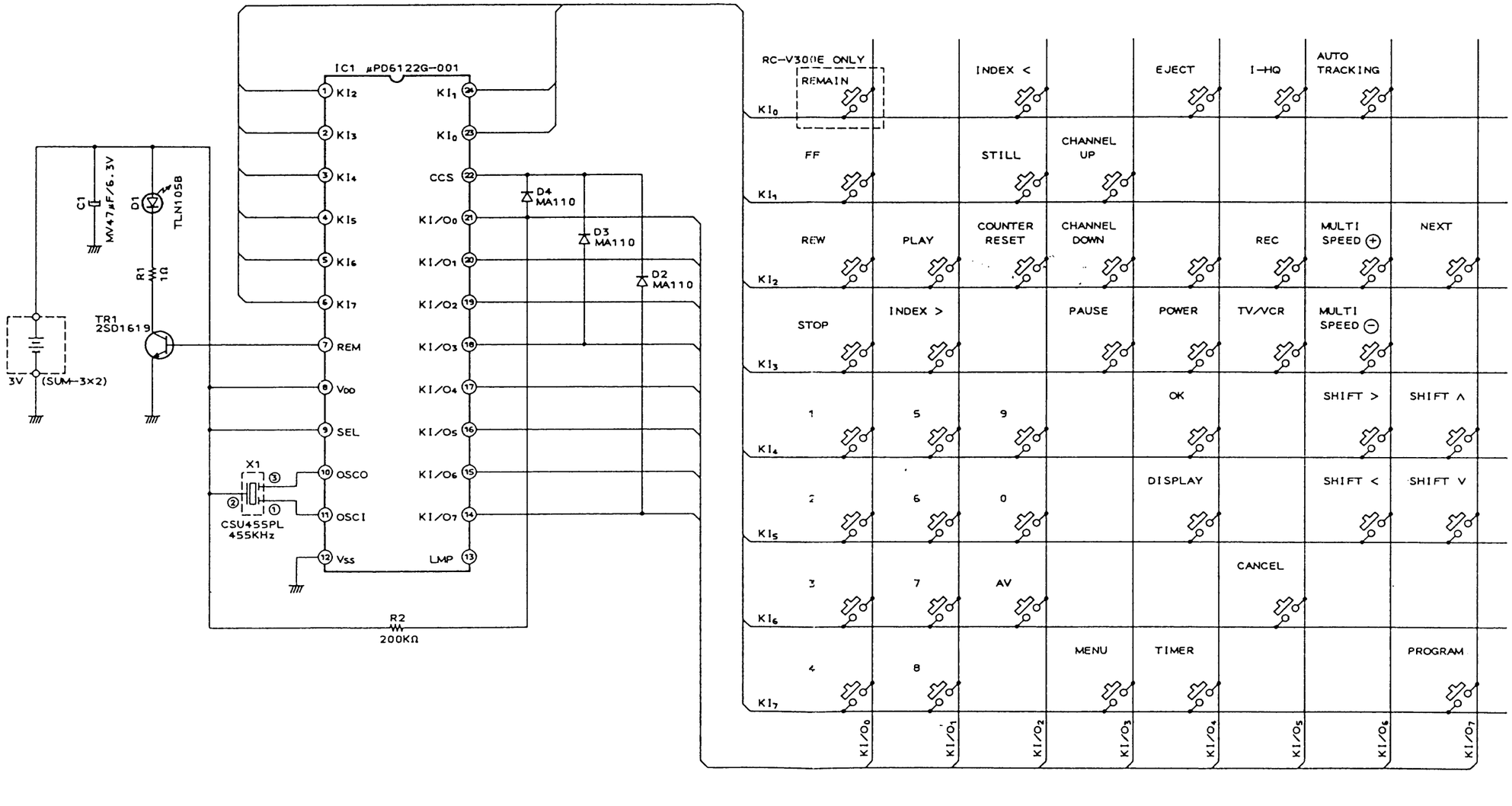
*	EM	EOH	EA	EK
CF1	SAF38.9 MZ70Z	SAF38.9 MZW70Z	SAF36.9 MZ70Z	SAF39.5 MZ70Z
CF2	SFE 5.5MBF	←	←	SFE 6.0MBF
CF3	TPS 5.5MB2	TPS 5.5MW	←	TPS 6.0MB2
L 3	6F16263 A2	←	←	6F16263 A3
L 4	6F16215 MZ70Z	←	6F16115 B3	6F16215 A1
L 5	6F16346 A1	←	6F16113 A1	6F16346 A1
L 6	18μ	←	←	15μ
L 7	18μ	15μ	18μ	15μ
R 4	100	100	150	180
R 7	22	←	←	15
R16	10K	—	10K	10K
C17	CH12P	←	←	CH15P

B (POWER SUPPLY) LINE

INDICATED VOLTAGES WERE MEASURED DURING E-E (STOP) MODE.

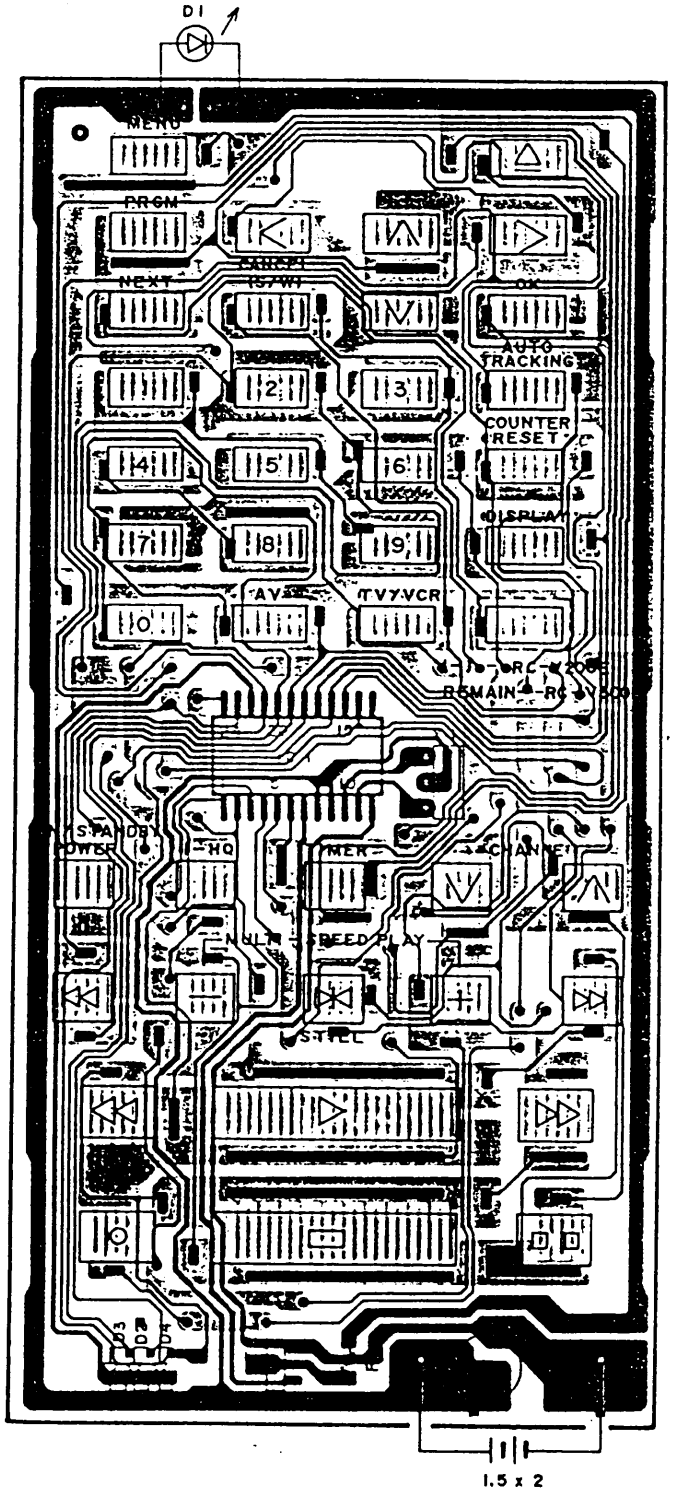
NOTE
UNLESS OTHERWISE SPECIFIED
ALL RESISTORS IN OHMS 1/10W (J)
ALL CAPACITORS IN μF 50 WV (J)
ALL INDUCTORS IN μH (K)

VS-F300EA/EOH
VS-F310EK/EOH
VS-F320EM
VIF UNIT
SCHEMATIC DIAGRAM
No.13-11 V113010M

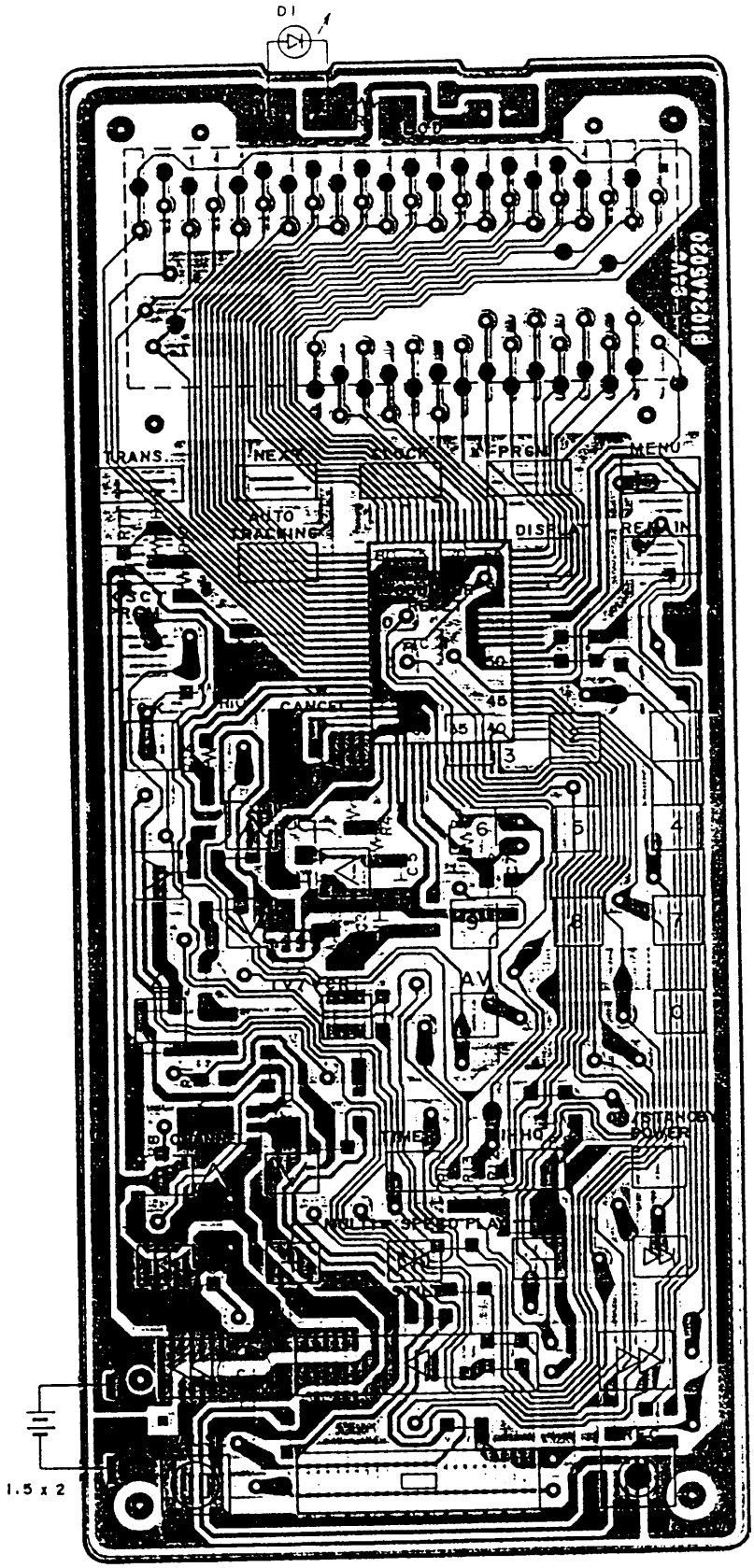


REMO-CON PCB B1022B5010

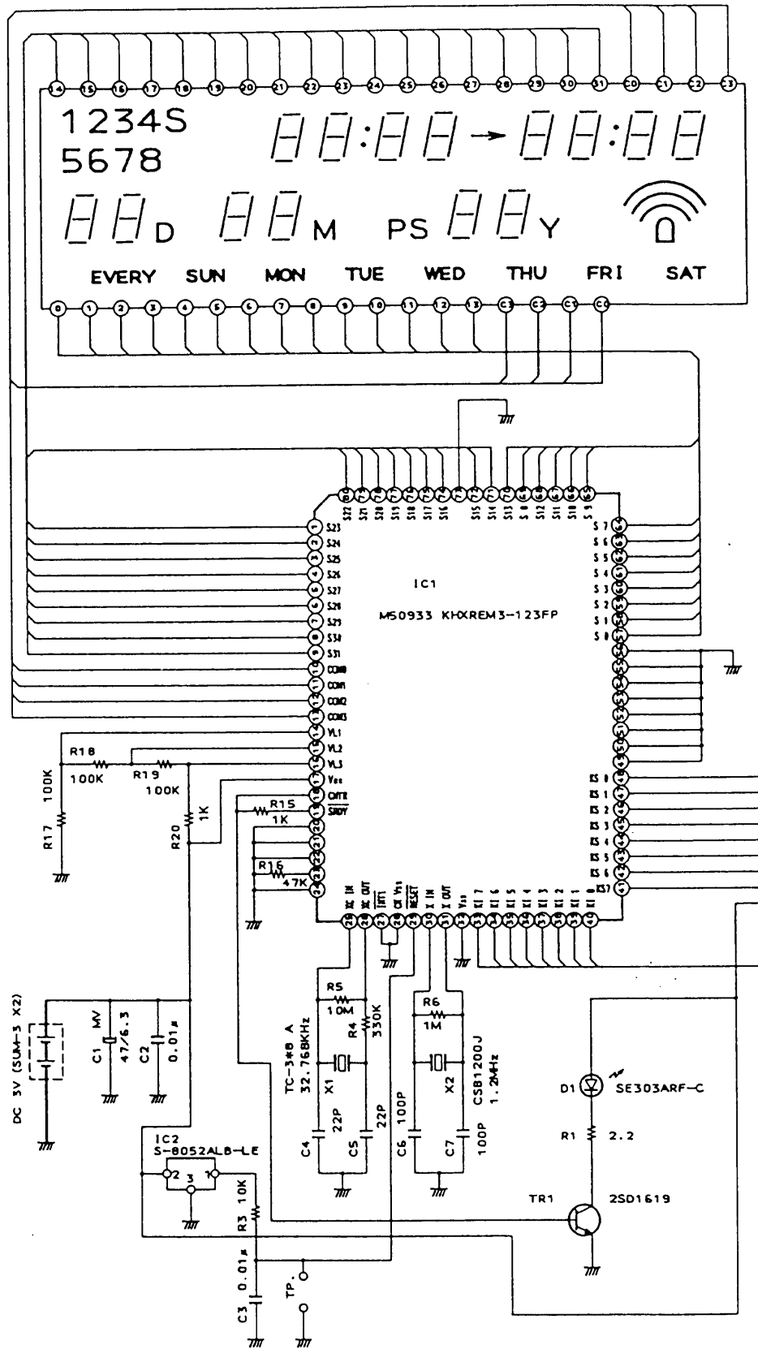
RC-V200E/V300E
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM
No.13-12 B102201M

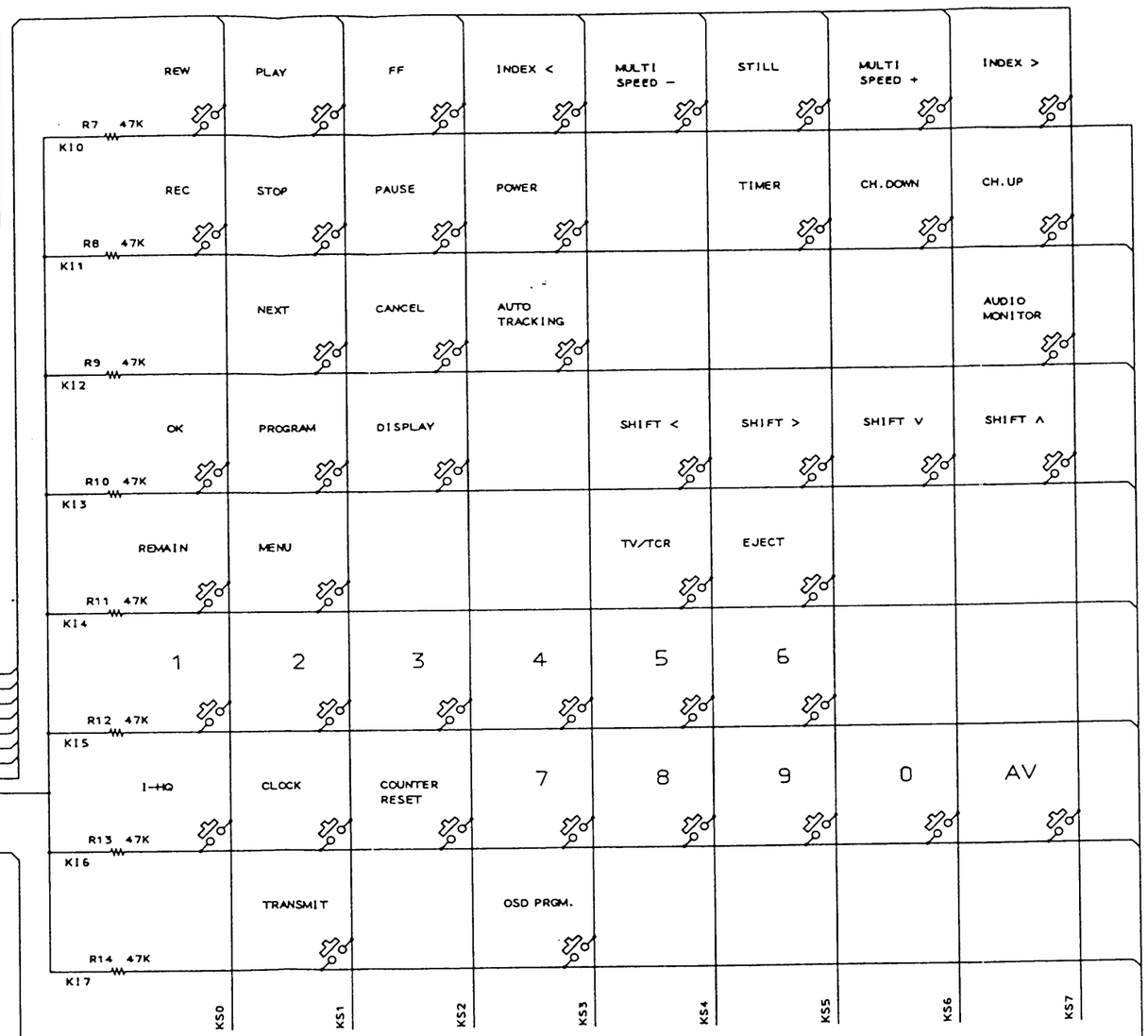


REMO-CON PCB B1022B5010



REMO-CON PCB BI024A5020

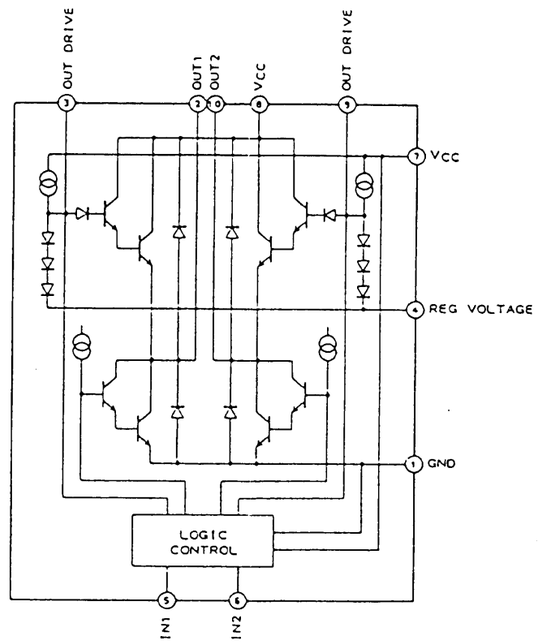




REMO-CON PCB B1024A5020

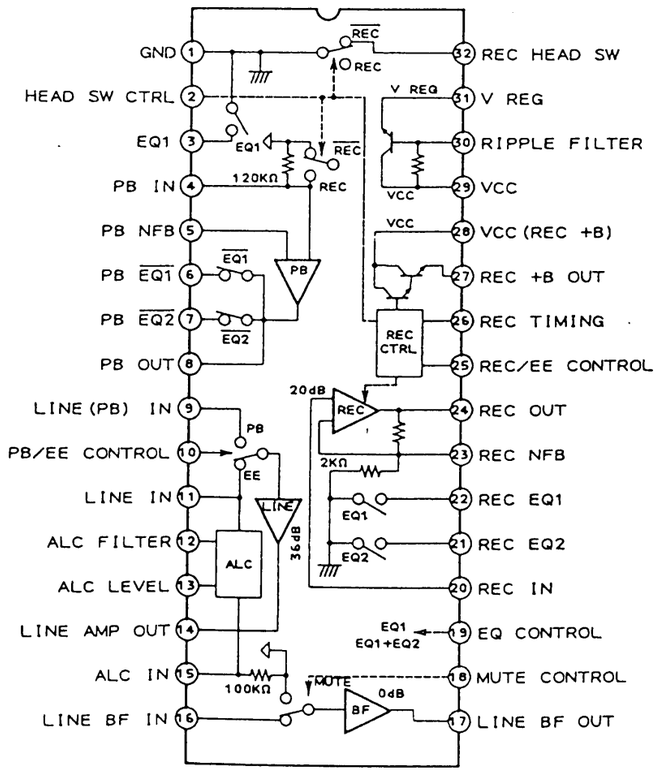
RC-V302E
REMOTE CONTROL UNIT
SCHEMATIC DIAGRAM
No.13-13 B102401M

BA6229 (BI-DIRECTIONAL MOTOR DRIVE)

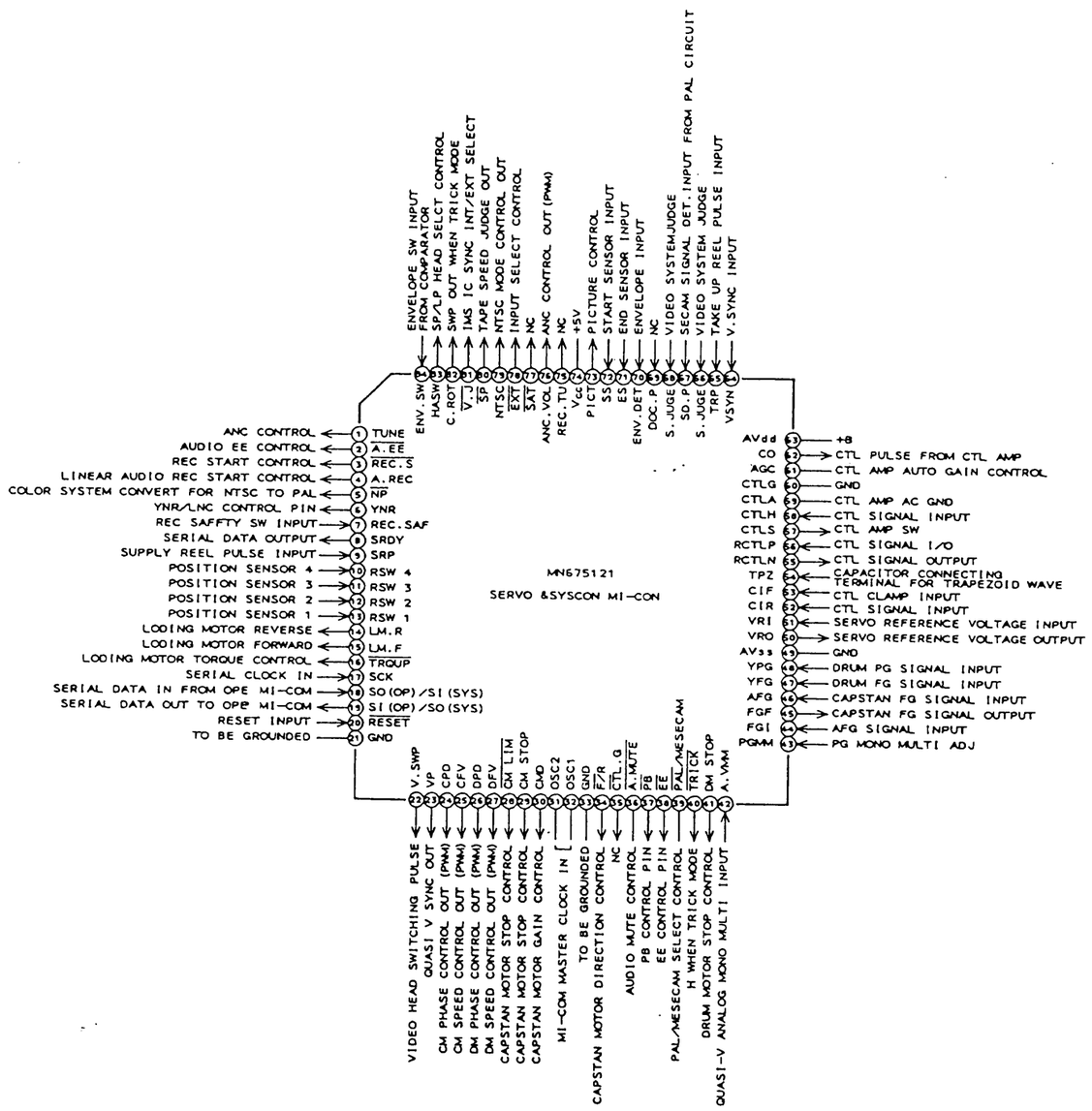


INPUT		OUTPUT		MODE
⑤	⑥	②	⑩	
H	H	L	L	BRAKE
L	H	L	H	CASSETTE & TAPE LOADING
H	L	H	L	CASSETTE & TAPE UNLOADING
L	L	OPEN	OPEN	STOP

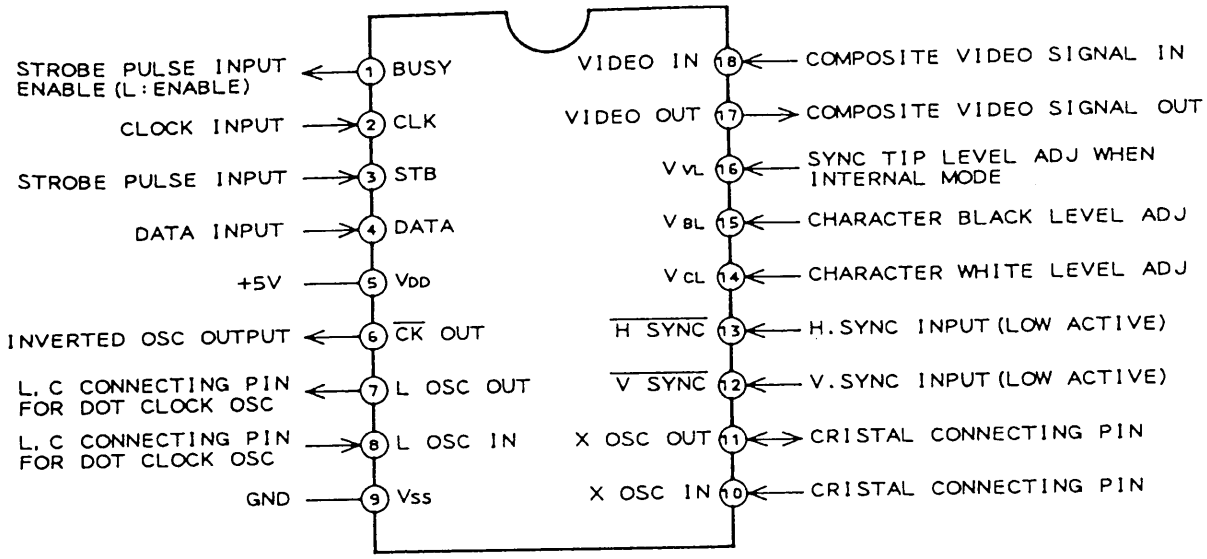
BA7765AS (AUDIO SIGNAL REC/PB AMPLIFIER)



MN675121 KBXSYS1 (SERVO/SYSCON MI-CON)



µPD6450 (CHARACTER GENERATOR)



µPD75216 (OPERATION MI-COM)